Anesthesia and Analgesia for Companion and Laboratory Animals

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ISSN: 1052-5378

Quick Bibliography Series, QB 95-12
January 1989 - January 1995

Updates QB 94-18

362 citations in English from AGRICOLA
March 1995

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aZ5071.N3 no.95-12
Search Strategy

Line Description

1. anesthe? or anasthe? or anaesthe? or analges? or pain? or distress or tranquil? or anxiolytic? or neuroleptanalges? or paralytic? or hypnotic? or sedative? or neuromuscular(W)block? or hypothermia

2. rabbit? or dog or dogs or cat? or puppy or puppies or kitten? or rat or rats or mouse or mice or guinea(W)pig? or hamster? or gerbil? or ferret? or vole? or rodent? or primate? or monkey? or squirrel? or fish? or frog? or amphibian? or xenopus or bufo

3. (S1 and S4)/title


5. S4 and LA=English

1 Acupuncture-produced surgical analgesia--physiology, indications, techniques, and limitations.
Klide, A.M.
Hagerstown, Md. : J.B. Lippincott Co; 1992 Mar.

Language: English
Descriptors: Dogs; Domestic animals; Anesthesia; Surgery; Mode of action; Acupuncture; Restriction of animals

2 Acute effects of a gamma-glutamylated derivate of S-(1,2-dichlorovinyl)-L-cysteine on renal function and ultrastructure in pentobarbital-anesthetized dogs: site-specific toxicity involving S1 and S2 cells of the proximal tubule.
Ridgewell, R.E.; Krejci, M.E.; Koechel, D.A.

Language: English
Descriptors: Dogs; Cysteine; Derivatives; Renal function; Ultrastructure; Kidneys; Toxins; Toxicity

Abstract: It has been established that L-gamma-glutamylated derivatives of alpha-amino acids are delivered more efficiently to the kidneys than are the parent alpha-amino acids. Therefore, we synthesized L-gamma-glutamyl-S-(1,2-dichlorovinyl)-L-cysteine (L-gamma-glutamyl-L-DCVC), the simplest L-gamma-glutamylated derivative of the nephrotoxic alpha-amino acid S-(1,2-dichlorovinyl)-L-cysteine (L-DCVC), and investigated its effects on renal function and ultrastructure in pentobarbital-anesthetized dogs. Intravenous doses of 23.15 and 92.60 micromoles of L-gamma-glutamyl-L-DCVC/kg of body weight induced significant increases in urinary protein output and significant decreases in the clearance of inulin during the 6-hour post-injection period. Changes were not observed in any of the other 13 renal function variables or in the 11 plasma and blood variables that were monitored throughout the same period. Both doses of L-gamma-glutamyl-L-DCVC induced renal ultrastructural lesions in the S1 and S2 cells of the canine proximal tubule; the remaining 8 cell types downstream and the glomeruli were not damaged. The onset and magnitude of renal function changes and the cell types affected by L-gamma-glutamyl-L-DCVC were virtually identical to those observed previously following IV administration of equivalent doses of L-DCVC to pentobarbital-anesthetized dogs. Rapid removal of the L-gamma-glutamyl group from L-gamma-glutamyl-L-DCVC (ie, deglutamylation) resulting in formation of the parent alpha-amino acid, L-DCVC, can best explain the extreme similarity in the nephrotoxic profiles of
these 2 toxicants.

3 NAL Call. No.: 41.8 V641

Language: English
Descriptors: Dogs; Postoperative complications; Nephritis; Renal failure; Halothane; Anesthesia; Flunixin; Trimethoprim; Sulfadiazine; Ischemia; Case reports

4 NAL Call. No.: 41.8 AM3A

Language: English
Descriptors: Dogs; Monitors; Blood pressure; Measurement; Modification; Veterinary equipment

Abstract: Two digital oscillometric human blood pressure measuring devices were modified and evaluated as blood pressure monitors in 12 healthy anesthetized dogs. Direct arterial pressures were measured via cannulation of the dorsal pedal artery and were correlated with indirect measurements through an inflatable cuff placed over the dorsal pedal artery below the hock joint of the contralateral limb. Direct and indirect measurements were compared for systolic, diastolic, and calculated mean arterial pressures. Blood pressure ranges between 215/145 mm of Hg and 65/30 mm of Hg were obtained, using combinations of halothane, phenylephrine, calcium, and IV administered fluids. Machine A was found to be insufficient for clinical application, on the basis of correlation coefficients between direct and indirect pressures of 0.78, 0.65, and 0.74 for systolic, diastolic, and mean arterial pressures, respectively. Higher correlation coefficients between direct and indirect pressures (0.77, 0.87, and 0.87, respectively) were obtained with machine B. The results of the study reported here suggest machine B may be an effective blood pressure monitoring device in anesthetized dogs.

5 NAL Call. No.: 41.8 AM3

Language: English
Descriptors: Dogs; Preanesthetic medication; Anesthetics; Adverse effects; Diazepam; Anesthesia

6 NAL Call. No.: 41.8 AM3A

Language: English
Abstract: Complete atrioventricular block was induced in 26 pentobarbital-anesthetized dogs to determine the effects of the alpha 2-adrenergic receptor agonists, xylazine and medetomidine, on supraventricular and ventricular automaticity. Prazosin and atipamezole, alpha-adrenoceptor antagonists, were administered to isolate alpha 1- or alpha 2-adrenoceptor effects. Six dogs served as controls and were given glycopyrrolate (0.1 mg/kg of body weight, IV) and esmolol (50 to 75 microgram/kg/min, IV) to induce parasympathetic and beta 1-adrenergic blockade, respectively. Eight dogs were given sequentially increasing doses of xylazine (n = 5), 0.000257 mg (10(-9)M) to 25.7 mg (10(-4)M) and medetomidine (n = 3), 0.000237 mg (10(-9)M) to 2.37 mg (10(-5) < M) after parasympathetic and beta 1-adrenergic blockade. Twelve dogs were given xylazine (n = 6, 1.1 mg/kg, IV) or medetomidine (n = 6, 0.05 mg/kg, IV) after parasympathetic and beta 1-adrenergic blockade. Three dogs given xylazine and 3 dogs given medetomidine were administered prazosin (0.1 mg/kg, IV) followed by atipamezole (0.3 mg/kg, IV). The order of prazosin and atipamezole was reversed in the remaining 3 dogs given either xylazine or medetomidine. Complete atrioventricular block and administration of glycopyrrolate and esmolol resulted in stable supraventricular and ventricular rates over a 4-hour period. Increasing concentration of xylazine or medetomidine did not cause significant changes in supraventricular or ventricular rate. Xylazine and medetomidine, in the presence of the alpha-adrenoceptor antagonists, prazosin (alpha(1)) and atipamezole (alpha(2)), did not cause significant changes in supraventricular or ventricular rate. Alpha 2-Adrenoceptor agonists do not induce direct alpha 1-or alpha 2-adrenoceptor-mediated depression of supraventricular or ventricular rate in dogs with complete atrioventricular block.
epinephrine inducing at least 4 ectopic ventricular depolarizations within 15 seconds during a 3-minute infusion or within 1 minute after the end of the infusion. Total dose was calculated as the product of infusion rate and time to arrhythmia. Statistical analysis of the differences between baseline ADE and posttreatment ADE for groups HS, HX, and HM was performed by use of one-way ANOVA. Mean +/- SEM baseline ADE values for groups HS, HX, and HM were 1.50 +/- 0.11, 1.49 +/- 0.10, and 1.57 +/- 0.22 micrograms/kg, respectively, and for groups HGS, HGX, and HGM were 3.37 +/- 0.61, 3.10 +/- 0.75, and 3.04 +/- 0.94 micrograms/kg, respectively. Differences for groups HS, HX, and HM were -0.02 +/- 0.15, -0.00 +/- 0.14, and -0.21 +/- 0.17 micrograms/kg, respectively, and for groups HGS, HGX, and HGM, were -0.59 +/- 0.26, -0.41 +/- 0.15, and -0.58 +/- 0.20 micrograms/kg, respectively. Differences among groups HS, HX, and HM, or among groups HGS, HGX, and HGM were not significant. We conclude that without and with cholinergic blockade in halothane-anesthetized dogs: preanesthetic dosages of xylazine (1.1 mg/kg, IM) or medetomidine (15 micrograms/kg, IM) do not enhance arrhythmogenicity, and at these dosages, there is no difference in the arrhythmogenic potential of either alpha 2-adrenergic agonist.


Abstract: Eight dogs (body weight, 12.5 to 21.5 kg) were assigned at random to each of 3 treatment groups (IS, IX, IM) that were not given glycopyrrolate and to each of 3 groups that were given glycopyrrolate (IGS, IGX, IGM). Dogs, were anesthetized with isoflurane (1.95% end-tidal concentration), and ventilation was controlled (PCO2, 35 to 40 mm of Hg end-tidal concentration). Glycopyrrolate was administered IV and IM at a dosage of 11 micrograms/kg of body weight, each. Saline solution, xylazine (1.1 mg/kg, IM), or medetomidine (15 micrograms/kg, IM) was administered 10 minutes after baseline ADE determination. Redetermination of the ADE at the same infusion rate was started 10 minutes after drug administration. Arrhythmogenic dose was determined by constant infusion of epinephrine at rates of 1.0, 2.5, and 5.0 micrograms/kg/min. The ADE was defined as the total dose of epinephrine that induced at least 4 ectopic ventricular depolarizations within 15 seconds during a 3-minute infusion, or within 1 minute after the end of the infusion. Total dose was calculated as the product of infusion rate and time to arrhythmia. Statistical analysis of the differences between baseline and treatment ADE values was performed by use of one-way ANOVA. Mean +/- SEM baseline ADE values for groups IS, IX, and IM were 1.55 +/- 0.23, 1.61 +/- 0.28, and 1.95 +/- 0.65 micrograms/kg, respectively. Differences for groups IS, IX, and IM were -0.12 +/- 0.05, -0.31 +/- 0.40, and -0.17 +/- 0.26, respectively. Differences for groups IGS, IGX, and IGM could not be calculated because arrhythmias satisfying the ADE criteria were not observed at the maximum infusion rate of 5.0 micrograms/kg/min. Differences among groups IS, IX, and IM were not significant. We conclude that in isoflurane-anesthetized dogs: preanesthetic dosages of xylazine (1.1 mg/kg, IM) or medetomidine (15 micrograms/kg, IM) do not enhance arrhythmogenicity, and at these dosages, there is no difference in the arrhythmogenic potential of either alpha 2-adrenergic receptor agonist.

11  
Anaesthesia and central nervous system disease in small animals. I. general considerations.  
Court, M.H.; Dodman, N.H.; Norman, W.M.; Seeler, D.C.  
Includes references.  
Language: English  
Descriptors: Dogs; Cat; Anesthesia; Anesthetics; Central nervous system; Nervous system diseases; Hypertension; Surgical operations; Physiopathology; Blood flow; Treatment

12  
Anaesthesia and central nervous system disease in small animals. II. anaesthetic management for specific diseases and procedures. Court, M.H.; Dodman, N.H.; Norman, W.M.; Seeler, D.C.  
Includes references.  
Language: English  
Descriptors: Dogs; Cat; Anesthesia; Anesthetics; Nervous system diseases; Central nervous system; Neoplasms; Head; Injuries; Spinal diseases; Diagnostic techniques

13  
Anaesthesia for small animal patients with disease of the hepatic, renal or gastrointestinal system.  
Dodman, N.H.; Seeler, D.C.; Court, M.H.; Norman, W.M.  
Includes references.  
Language: English  
Descriptors: Dogs; Cat; Anesthesia; Anesthetics; Liver diseases; Kidney diseases; Digestive system diseases

14  
Anaesthetic effects of chloral hydrate, pentobarbitone and urethane in adult male rats.  
Field, K.J.; White, W.J.; Lang, C.M.  
Includes references.  
Language: English  
Descriptors: Rats; Anesthetics  
Abstract: Chloral hydrate, pentobarbitone and urethane were evaluated and compared for onset, duration and depth of anaesthesia, cardiovascular and respiratory effects, nociception and mortality in adult male rats. Chloral hydrate (300 and 400 mg/kg) severely depressed the cardiovascular and respiratory systems. Duration of anaesthesia was linearly related to dose, and anaesthetic depth and analgesia were excellent. Pentobarbital (40 mg/kg) produced a short period light surgical anaesthesia. Moderate to severe respiratory and cardiovascular depression occurred. Duration of anaesthesia was not related to dose. Urethane (1.2 and 1.5 g/kg) caused moderate cardiovascular depression. In addition, mortality was high at the 1.5 g/kg dose. Duration of anaesthesia was greater than 24 h for most animals. Anaesthesia depth and analgesia were excellent.
Anesthesia and Analgesia for Companion and Laboratory Animals, QB 95-12

15

Language: English
Descriptors: Dogs; Cat; Trauma; Anesthesia; Physiopathology; Respiratory system; Cardiovascular system; Central nervous system

16

Language: English
Descriptors: Dogs; Cataract; Anesthesia; Anesthetics; Muscle relaxants; Halothane; Nitrous oxide; Thiopental; Preoperative care; Surgery

17

Language: English
Descriptors: Dogs; Pain; Analgesics

18

Language: English
Descriptors: Dogs; Pethidine; Analgesics; Anesthesia; Halothane; Methoxyflurane; Pain; Drug effects; Blood pressure; Pulse rate

Abstract: This study was designed to test analgesia, duration, and cardiovascular changes induced by meperidine (MEP) and oxymorphone (OXY) following methoxyflurane (MOF) and halothane (HAL) anesthesia. Eight healthy dogs were given atropine and acepromazine, and anesthesia was induced with thiamylal and maintained with 1.5 minimal alveolar concentration of MOF or HAL for 1 hour during controlled ventilation. Eight treatments were given with each anesthetic: 3 with MEP (0.5, 1.0, and 2.0 mg/kg, IV), 3 with oxymorphone (OXY; 0.05, 0.1, and 0.2 mg/kg, IV), and 2 placebos with sterile water. Test drugs were given at the end of anesthesia when early signs of recovery were evident. Minimal threshold stimulus/response nociception was assessed by use of an inflatable soft plastic colonic balloon. Blood pressures and pulse rate were measured with a noninvasive monitor. Meperidine and OXY were found to be effective analgesics and could be reversed with naloxone. Intravenous administration of 2.0 mg of MEP/kg provided analgesia for 36 +/- 6 minutes and 39 +/- 15 minutes after MOF and HAL, respectively. In contrast, OXY was effective at all 3 doses with effects of IV administration of 0.2 mg of OXY/kg lasting 154 +/- 13 minutes and 152 +/- 12 minutes, after MOF and HAL, respectively. Analgesia could not be demonstrated after anesthesia for
acepromazine, MOF, or HAL. Blood pressure was not changed by either anesthetic nor was it influenced by MEP or OXY. Pulse rate was significantly depressed by the higher doses of OXY following HAL, but was not changed by MEP following either anesthetic. This study demonstrated the longer duration of analgesia of OXY. In addition, we could not find that analgesia was provided by either MOF or HAL following recovery from anesthesia.

19 Analgesia in dogs after intercostal thoracotomy: a clinical trial comparing intravenous buprenorphine and interpleural bupivacaine. Conzemius, M.G.; Brockman, D.J.; King, L.G.; Perkowski, S.Z. Philadelphia, Pa.: W.B. Saunders Company; 1994 Jul. Veterinary surgery v. 23 (4): p. 291-298; 1994 Jul. Includes references. Language: English Descriptors: Dogs; Analgesics; Safety; Efficacy; Pain; Surgical operations; Intravenous injection; Injection; Heart rate; Respiration rate; Blood pressure; Blood; Gases; Body temperature; Electrocardiograms


21 Analgesic activity and respiratory effects of butorphanol in sheep. Waterman, A.E.; Livingston, A.; Amin, A. London: British Veterinary Association; 1991 Jul. Research in veterinary science v. 51 (1): p. 19-23; 1991 Jul. Includes references. Language: English Descriptors: Sheep; Analgesics; Dosage; Pain; Respiratory gases; Mechanical stimulation; Heat tolerance Abstract: The analgesic drug butorphanol tartrate has proved useful clinically in horses and dogs but its analgesic profile had not yet been investigated in sheep. This study was initiated to determine the thermal and mechanical antinociceptive activity of butorphanol (at the dose rates 0.05, 0.1 and 0.2 mg kg⁻¹) in sheep. The drug produced significant analgesia in the thermal lost system, the duration of which was dose related but no significant elevation in mechanical pressure thresholds could be detected. In a further set of experiments the dose rate was increased to 0.4 mg kg⁻¹ and mechanical testing was repeated. There was still no clinically significant elevation in pressure thresholds. At a dose rate of 0.2 mg kg⁻¹ the drug had no detectable effect on respiratory blood gas tensions. Behavioural changes were severe if a dose rate of 0.2 mg kg⁻¹ was exceeded.

Descriptors: Flavonoids; Derivatives; Structure activity relationships; Analgesics; Mice

23 NAL Call. No.: RS164.P59
Analgesic and anti-inflammatory activities of the crude hydroalcoholic extract obtained from the bark of Hymenaea martiana. Neves, M.C.A.; Neves, P.C.A.; Zanini, J.C. Jr; Medeiros, Y.S.; Yunes, R.A.; Calixto, J.B.
Sussex: John Wiley & Sons; 1993 Sep.
Language: English
Descriptors: Hymenaea; Medicinal plants; Plant extracts; Bark; Pharmaceutical products; Medicinal properties; Inflammation; Edema; Pain; Blood vessels; Rats

24 NAL Call. No.: RS164.P59
Analgesic and antiinflammatory activity in acute and chronic conditions of Trema guineense (Schum. et Thonn.) Ficalho and Trema micrantha Blume extracts in rodents. Barbera, R.; Trovato, A.; Rapisarda, A.; Ragusa, S.
Sussex: John Wiley & Sons; 1992 May.
Includes references.
Language: English
Descriptors: Trema; Plant extracts; Analgesics; Antiinflammatory agents; Pharmacology; Rats

25 NAL Call. No.: RS160.I47
Analgesic and antiinflammatory effects of chasmanthera dependens. Onabanjo, A.O.; John, T.A.; Sokale, A.A.; Samuel, O.T.
Language: English
Descriptors: Menispermaceae; Medicinal plants; Pharmaceutical products; Plant extracts; Alkaloids; Tannins; Cardiac glycosides; Medicinal properties; Analgesics; Antiinflammatory agents; Drug toxicity; Mice

26 NAL Call. No.: RS164.P59
Language: English
Descriptors: Scoparia dulcis; Medicinal plants; Plant extracts; Flavonoids; Pharmaceutical products; Triterpenoids; Medicinal properties; Inflammation; Pain; Fever; Rats; Mice

27 NAL Call. No.: RS160.I47
Language: English
Descriptors: Mucuna pruriens; Medicinal properties; Plant extracts; Leaves; Fruits; Trichomes; Analgesics; Antipyretics; Pain; Fever; Inflammation; Rats; Mice
28 NAL Call. No.: 450 P697
Analgesic and behavioural effects of Morinda citrifolia.
Younos, C.; Rolland, A.; Fleurentin, J.; Lanher, M.C.;
Misslin, R.; Mortier, F.
Language: English
Descriptors: Morinda citrifolia; Roots; Plant extracts;
Analgesics; Pharmaceutical products; Medicinal properties;
Mice; Naloxone

29 NAL Call. No.: 450 P697
Analgesic, antipyretic and anti-inflammatory properties of
Euphorbia hirta. Lanher, M.C.; Fleurentin, J.; Dorfman, P.;
Language: English
Descriptors: Euphorbia hirta; Plant extracts; Pharmaceutical products; Mice; Rats; Analgesics; Antipyretics;
Antiinflammatory agents

30 NAL Call. No.: RS160.J6
Analgesic effect of Momordica charantia seed extract in mice
and rats. Biswas, A.R.; Ramaswamy, S.; Balna, J.S.
Language: English
Descriptors: Momordica charantia; Medicinal plants; Plant extracts; Analgesics; Mice; Rats

31 NAL Call. No.: 41.8 J8292
Analgesic effects of acupuncture in thoracolumbar disc disease
in dogs. Still, J.
London : British Small Animal Veterinary Association; 1989
298-301. ill; 1989 May. Includes references.
Language: English
Descriptors: Dogs; Acupuncture; Spinal diseases; Pain

32 NAL Call. No.: SF911.V43
The analgesic effects of administering fentanyl or
medetomidine in the lumbosacral epidural space of cats.
Duke, T.; Komulainen Cox, A.M.; Remedios, A.M.; Cribb, P.H.
Language: English
Descriptors: Cats; Fentanyl; Medetomidine; Drug effects;
Conduction anesthesia; Efficacy; Pain; Limbs; Vomiting;
Adverse effects

33 NAL Call. No.: SF601.C66
Analgesic therapy.
Hansen, B.D.
Language: English
Descriptors: Dogs; Cats; Pain; Analgesics; Drug therapy; Dosage; Agonists; Postoperative care; Osteoarthritis

34 NAL Call. No.: SF910.P34A55 1992

Language: English

Descriptors: Dogs; Cataract; Surgical operations; Anesthesia; Anesthetics; Pain; Eyes; Analgesics; Opioids; Drugs; Dosage; Muscle relaxants; Postoperative care; Postoperative complications; Inhaled anesthetics

35 NAL Call. No.: SF601.V523

Language: English

Descriptors: Dogs; Cat; Anesthesia; Anesthetics; Pain; Emergencies

36 NAL Call. No.: SF601.P76

Language: English

Descriptors: Dogs; Cats; Anesthesia; Surgical operations; Head; Neck; Preoperative care; Fasting; Preanesthetic medication; Anesthetics; Analgesics; Respiration; Air flow; Tubes; Postoperative care; Monitoring

37 NAL Call. No.: SF914.A53 1990

Language: English

Descriptors: Amphibia; Reptiles; Anesthesia

38 NAL Call. No.: 41.8 AM3

Language: English

Descriptors: Pups; Kittens; Anesthesia; Anesthetics; Age differences; Pharmacokinetics; Respiratory system; Cardiovascular system; Liver; Kidneys; Thermoregulation

39 NAL Call. No.: 41.8 AM3
Anesthetic and medical management of acute hemorrhage during

Language: English

Descriptors: Rabbits; Injectable anesthetics; Intramuscular injection; Renal failure; Toxicity; Anesthesia; Complications

Abstract: Telazol was evaluated as an anesthetic for rabbits. Two groups of five rabbits each were injected intramuscularly with 32 or 64 mg/kg of Telazol, and the depth and duration of anesthesia period monitored. At both doses, the righting reflex was lost within 2 minutes postinjection. Animals in both groups responded to noxious stimuli for the duration of the anesthesia. Hematology and urinalyses were performed daily for 7 days postinjection. Hematologic parameters remained unchanged in both groups. In the high-dose group, blood urea nitrogen and serum creatinine levels increased 1 day postinjection and continued steadily throughout the week. Elevations in urine protein and the presence of casts correlated with this increase. In the low-dose group, blood urea nitrogen and creatinine levels increased and protein was present in the urine of four of five rabbits beginning approximately 5 days postinjection. Histologically, severe renal tubular necrosis was evident 7 days postinjection in all high-dose rabbits and in three rabbits in the low-dose group. Our results indicate that Telazol does not produce analgesia in rabbits and is nephrotoxic at both 32 and 64 mg/kg. We conclude that Telazol is contraindicated for use in rabbits.
Anesthetic requirement of isoflurane is reduced in spontaneously hypertensive and Wistar-Kyoto rats.
Cole, D.J.; Marcantonio, S.; Drummond, J.C.
Language: English
Descriptors: Rats; Anesthetics; Anesthesia; Hypertension

Abstract: The isoflurane requirement to keep 50% of rats (Rattus norvegicus) unresponsive to noxious stimuli (MAC) was determined in age matched Sprague-Dawley (SD, n = 8), Spontaneously Hypertensive (SHR, n = 8) and Wistar-Kyoto (WKY, n = 8) strains. Following induction and orotracheal intubation, each rat received isoflurane (1.65% end-tidal) for 120 minutes. Physiologic parameters were similar except for expected differences in mean arterial pressure (148 +/- 13mmHg-SHR group, 101 +/- 10mmHg-SD group and 94 +/- 12mmHg-WKY group [mean +/- standard deviation]). Anesthetic equilibration was verified by infrared analysis of end-tidal gases. MAC was then determined in each rat by the tail clamp method and a group MAC calculated.

Anesthetic techniques for neutering 6- to 14-week-old kittens.
Faggella, A.M.; Aronsohn, M.G.
Language: English
Descriptors: Kittens; Castration; Ovariectomy; Anesthesia; Guidelines; Safety; Adverse effects; Anesthetics

Anesthetics and analgesics in rabbits.
Hobbs, B.A.
Language: English
Descriptors: Rabbits; Anesthetics; Analgesics

Antagonisation der Xylazin-Ketamin Neuroleptanalgesie und ihrer Nebenwirkungen durch Yohimbin und 4-aminopyridin bei der Katz / eingereicht von Jurgen Wittker [Antagonization of Xylazine/Ketamine neurleptanalgesia and its side effects through yohimbin and 4-amino pyridin in cats].
Wittker, Jurgen
Language: German
Antagonism by flumazenil of midazolam-induced changes in quantitative electroencephalographic data from isoflurane-anesthetized dogs. Keegan, R.D.; Greene, S.A.; Moore, M.P.; Gallagher, L.V.

Abstract: Quantitative electroencephalography (QEEG) was assessed in 5 dogs anesthetized with 1.6% end-tidal concentration of isoflurane and after subsequent administration of the benzodiazepine midazolam (0.2 mg/kg of body weight, IV). Ventilation was controlled to maintain normocapnia. Effect of the benzodiazepine antagonist, flumazenil (0.04 mg/kg, IV), on QEEG in midazolam-isoflurane-anesthetized dogs was determined. Heart rate, arterial blood pressure, esophageal temperature, arterial pH and blood gas tensions, end-tidal CO2 concentration, and end-tidal isoflurane concentration were monitored throughout the study. A 21-lead linked-ear montage was used for recording the EEG data. Quantitative EEG data were stored on an optical disk for later analysis. Values for absolute power of EEG were determined for delta, theta, alpha, and beta-frequencies. Cardiovascular variables remained stable throughout the study. Midazolam administration was associated with decreased absolute power in all frequencies of EEG at all electrode sites. Administration of flumazenil antagonized midazolam-induced decreased absolute power of EEG in all frequencies at all electrode sites. We conclude that QEEG provides a noninvasive, objective measure of midazolam- and flumazenil-induced changes in cortical activity during isoflurane anesthesia.

Antagonism of ketamine-xylazine anesthesia in rats by administration of yohimbine, tolazoline, or 4-aminopyridine. Komulainen, A.; Olson, M.E.

Abstract: Antagonism of ketamine-xylazine (85 mg of ketamine/kg of body weight and 15 mg of xylazine/kg, IM) anesthesia in rats by yohimbine (YOH; 1, 5, 10, and 20 mg/kg, IP), tolazoline (TOL; 10, 20, or 50 mg/kg, IP), 4-aminopyridine 4-AP; 1 or 5 mg/kg, IP), or a combination of yohimbine and 4-aminopyridine (YOH:4-AP, 1 mg/kg:1 mg/kg or 5 mg/kg:1 mg/kg, IP) was studied. All dosages of YOH, TOL, 4-Ap, and YOH:4-AP reduced the time to appearance of corneal and pedal reflexes. Only TOL was effective in reducing time to appearance of the crawl reflex and recovery time. Yohimbine, 4-Ap, YOH:4-AP, and TOL were effective in reversing respiratory depression caused by ketamine-xylazine anesthesia, but anesthetic-induced hypothermia was not antagonized. When given to non-anesthetized rats, the antagonists had little influence on respiratory rate, but all antagonists caused significant (P < 0.05) reduction in core body temperature for at least 90 minutes. When YOH was used as an anesthetic antagonist at dosage of 20 mg/kg, 20% mortality was observed and was attributable to acute respiratory arrest. The use of 4-Ap and YOH:4-AP at the dosages studied induced moderate to severe muscular tremors. In conclusion, TOL at dosage of 20 mg/kg given IP, appears to be an appropriate antagonist for ketamine-xylazine anesthesia in rats.
cats.
Language: English
Descriptors: Cats; Anesthesia; Drug antagonism; Narcotic antagonists; Yohimbine; 4-aminopyridine; Anesthetics; Ketamine

NAL Call. No.: 450 P697
Anti-inflammatory and analgesic effects of an aqueous extract of Harpagophytum procumbens.
Language: English
Descriptors: Harpagophytum procumbens; Plant extracts; Pharmaceutical products; Antiinflammatory agents; Analgesics; Rats; Mice

NAL Call. No.: RS160.I47
Anti-inflammatory, analgesic, antipyretic and antibacterial activity of Astragalus siculus Biv.
Bisignano, G. \u University of Messina, Messina, Italy; Iauk, L.; Kiriavnenen, S.; Galati, E.M.
Language: English
Descriptors: Astragalus; Medicinal plants; Medicinal properties; Plant extracts; Antibacterial properties; Inflammation; Pain; Fever; Rats; Mice

NAL Call. No.: 500 N484
Antinociceptive effects of pyridoxine, thiamine, and cyanocobalamin in rats. Bartoszyk, G.D.; Wild, A.
Language: English
Descriptors: Cyanocobalamin; Pyridoxine; Thiamin; Dosage effects; Pain; Rats

NAL Call. No.: RS164.P59
Antioedema and analgesic actions of Diodia scandens extracts in rats and mice. Akah, P.A.; Okogun, J.I.; Ekpendu, T.O.
Sussex : John Wiley & Sons; 1993 Jul.
Language: English
Descriptors: Rubiaceae; Medicinal plants; Pharmaceutical products; Plant extracts; Leaves; Medicinal properties; Inflammation; Edema; Analgesics; Pain; Mice; Rats

NAL Call. No.: RS160.J6
Language: English
Abstract: The putative anxiolytic activity of the white and red varieties of ginseng, the root of Panax ginseng, was investigated in rats and mice using a number of experimental paradigms of anxiety and compared with that of diazepam. Pilot studies indicated that single-dose administration of ginseng had little to no acute behavioral effects, hence the two varieties of ginseng were administered orally at two dose levels twice daily for 5 days, while diazepam (1 mg/kg, i.p.) was administered acutely. White and red varieties of ginseng (20 and 50 mg/kg) showed positive results when tested against several paradigms of experimental anxiety. Both were effective in the open-field and elevated plus-maze tests and reduced conflict behaviour in thirsty rats and footshock-induced fighting in paired mice. Ginseng also attenuated pentylenetetrazole-induced decrease in rat brain MAO activity, confirming its anxiolytic activity since this has been proposed to be an endogenous marker for anxiety. The effects induced by white and red ginseng (50 mg/kg X 5 days) were comparable to those induced by diazepam (1 mg/kg).

Assessment of the hypnotic/sedative effects and toxicity of Passiflora edulis aqueous extract in rodents and humans. Maluf, E.M.T.; Frochtenhausen, M.L.; Leite, J.R. Sussex: John Wiley & Sons; 1991 Dec. Phytotherapy research: PTR v. 5 (6): p. 262-266; 1991 Dec. Includes references. Language: English Descriptors: Passiflora edulis; Leaves; Plant extracts; Medicinal properties; Drug toxicity; Folk medicine; Mice; Rats; Man

Atracurium administration, as an infusion, to induce neuromuscular blockade in clinically normal and temporarily immune-suppressed cats. Ilkiw, J.E.; Forsyth, S.F.; Hill, T.; Gregory, C.R. Schaumburg, Ill.: The Association; 1990 Nov01. Journal of the American Veterinary Medical Association v. 197 (9): p. 1153-1156; 1990 Nov01. Includes references. Language: English Descriptors: Cats; Muscle relaxants; Infusion; Immunosuppression; Cyclosporins; Prednisolone; Drug combinations

Atraumatic endotracheal intubation in small rabbits. Conlon, K.C.; Corbally, M.T.; Bading, J.R.; Brennan, M.F. Cordova, Tenn.: American Association for Laboratory Animal Science; 1990 Mar. Laboratory animal science v. 40 (2): p. 221-222. ill; 1990 Mar. Includes references. Language: English Descriptors: Rabbits; Trachea; Tubes; Inhaled anesthetics; Anesthesia; Laboratory methods


Abstract: Programmed electrical stimulation techniques were used to evaluate the effects of halothane and isoflurane on induction of atrial fibrillation in anesthetized dogs. Experiments were performed in 16 dogs anesthetized with alpha-chloralose. Critically timed premature stimuli were applied to the right atrial appendage and Bachmann bundle to determine the atrial fibrillation threshold, defined as the minimal current required to induce rapid, irregular atrial electrical activity of at least 8 seconds' duration. Atrial fibrillation
thresholds were determined at baseline (0.0% inhalational anesthetic), 0.5 minimal alveolar concentration (MAC), and 1.0 MAC of halothane (n = 8) and isoflurane (n = 8). In the absence of inhalation anesthetic, it was significantly (P < 0.01) easier to induce atrial fibrillation at the Bachmann bundle vs the right atrial appendage. Atrial fibrillation threshold at the Bachmann bundle was not affected by increasing concentrations of halothane, but was increased by 1.0 MAC of isoflurane (P < 0.05). It was concluded that at 1.0 MAC isoflurane, but not halothane, has antifibrillatory effects in atrial tissue.

65 NAL Call. No.: RB127.P34
Language: English
Descriptors: Rats; Spinal cord; Morphine; Neurophysiology; Neurons; Pain

66 NAL Call. No.: SF911.V43
Language: English
Descriptors: Dogs; Anesthesia; Nervous system; Drug combinations; Cardiovascular system; Drug effects

67 NAL Call. No.: 41.8 Am3
Language: English
Descriptors: Cats; Lungs; Trauma; Internal pressure; Anesthesia; Lung ventilation; Accidents; Case reports

68 NAL Call. No.: 41.8 Am3A
Language: English
Descriptors: Laboratory animals; Benzocaine; Adverse effects; Topical application; Methemoglobinemia; Species differences
Abstract: In a screening study, a common benzocaine-containing anesthetic was topically applied to the following species: dogs (n = 11), domestic shorthair cats (n = 38), Long-Evans rats (n = 22), Sprague-Dawley rats (n = 11), ferrets (n = 6), rhesus monkeys (n = 10), cynomolgus monkeys (n = 10), New Zealand White rabbits (n = 18), miniature pigs (n = 9), ICR mice (n = 4), C3H mice (n = 4), and C57BL/10SnJ mice (n = 24). All animals, except mice and rats, received a 2-second spray to the mucous membranes of the nasopharynx for an estimated dose of 56 mg. A 2-second spray to rodents' oral mucous membranes delivered too great a
volume of fluid for these animals; therefore, an equivalent
dose was applied to the oral mucosa membranes by use of a 23-
gauge needle and syringe. Initial (baseline) blood samples, as
well as 4 blood samples taken every 15 minutes after drug
application, were analyzed for methemoglobin (MHb), using an
oximeter. Positive MHb response (> 3 SD above baseline) was
seen in individuals of all groups. The study was repeated in
dogs several months later to confirm low response. Response to
benzocaine spray was observed in most animals tested, with
response peaking between 15 and 30 minutes after dosing.
Positive MHb response ranged from 3.5 to 38%, was detected in
> 95% of individual animals, and ranged from 15 to 60 minutes
after drug administration. Responses were variable because of
the screening nature of the study and the topical route of
drug administration, but the highest responses were observed
in rabbits and cats, and the lowest were seen in mice and
dogs. Methemoglobin could be a confounding variable for
several types of studies; investigators should consider this
toxicity of benzocaine-containing topical anesthetics and use
appropriate alternative methods or drugs (ie, lidocaine).

69                                    NAL Call. No.: 447.8 Am3
Blunted effect of ANP on hematocrit and plasma volume in
streptozotocin-induced diabetes mellitus in rats.
Valentin, J.P.; Sechi, L.A.; Humphreys, M.H.
Bethesda, Md. : American Physiological Society, 1898- ; 1994
R591; 1994 Feb. Includes references.
Language:  English
Descriptors: Diabetes mellitus; Experimental diabetes;
Peptides; Hematocrit; Blood volume; Blood pressure; Blood
sugar; Guanosine monophosphate; Rats
Abstract:  Atrial natriuretic peptide (ANP) infusion increases
hematocrit and decreases plasma volume by inducing a transfer
of plasma fluid from the vascular to the interstitial
compartment. Diabetes mellitus is associated with resistance
to the renal actions of ANP. We explored the possibility that
the extrarenal responses to ANP may also be altered in the
diabetic state by measuring changes in arterial pressure and
hematocrit during infusion of ANP (1 microgram.kg-1.min-1 for
45 min) into anesthetized, acutely nephrectomized rats 2-3 wk
after induction of diabetes from intravenous streptozotocin
(STZ) injection (60 mg/kg). Blood glucose was significantly
elevated in diabetic rats when compared with control and
insulin-treated diabetic rats. Arterial pressure during ANP
infusion decreased similarly in control, diabetic, and
insulin-treated diabetic rats (by 7.6 +/- 1.6, 9.6 +/- 1.9,
and 8.2 +/- 2% respectively; all P < 0.002). In control rats,
hematocrit increased progressively to a maximum value of 9.5
+/- 0.9% as a result of the infusion, corresponding to a
decrease in plasma volume of 16.3 +/- 1.3%. In contrast, the
ANP-induced increase in hematocrit was markedly blunted in
diabetic rats (1.6 +/- 0.8%; P < 0.0001 vs. ANP infusion in
control rats). Reducing the hyperglycemia in diabetic rats by
insulin therapy restored the increase in hematocrit in
response to ANP (8.5 +/- 1.1%; P < 0.0001 vs. ANP infusion in
diabetic rats and P = NS vs. control rats). ANP infusion
increased plasma ANP levels to the same extent in the three
groups, whereas plasma guanosine 3',5'-cyclic monophosphate
(cGMP) was significantly less in diabetic as compared with
control and insulin-treated diabetic rats. Acute reduction of
hyperglycemia did not restore the ANP-induced increase in
hematocrit (1.3 +/- -2.2%; P = NS vs. ANP infusion in diabetic
rats). This study demonstrates that 1) the effect of ANP on
hematocrit and fluid distribution is blunted in STZ-induced
diabetes, while its hypotensive action is preserved, and 2)
restoring glucose levels to normal in diabetic rats by
chronic but not by acute insulin treatment normalizes the
hemoconcentrating effect of exogenously administered ANP. Such
a defect is reflected in a blunted plasma cGMP concentration
after ANP infusion in STZ-diabetic rats and may contribute to
the altered body fluid physiology in this condition.

70                                    NAL Call. No.: SF911.V43
Butorphanol does not reduce the minimum alveolar concentration
of halothane in dogs.
Carbon dioxide: an alternative to ether as an anesthetic in a plague surveillance program.
Ramirez, J.A.; Hall, F.; Fujioka, K.K.
Language: English
Descriptors: California; Spermophilus beecheyi; Disease vectors; Anesthetics; Carbon dioxide; Monitoring; Rodent control

Carbon dioxide as a short-term restraint anaesthetic in rats with subclinical respiratory disease.
Fenwick, D.C.; Blackshaw, J.K.
Language: English
Descriptors: Rats; Inhaled anesthetics; Oxygen; Anesthesia; Carbon dioxide; Respiratory diseases; Safety; Restraint of animals

Abstract: The use of carbon dioxide (CO2) with, and without, oxygen (O2) as a short-term restraint anaesthetic for Wistar rats in which subclinical respiratory disease was endemic, was assessed in 3 separate experiments. In the first, rats were placed in a CO2 atmosphere generated from solid CO2 chips in a 701 plastic bin, and removed at time intervals ranging from 0 to 120 s after disappearance of the pedal reflex. Eight of 25 rats died, including 2 which were removed immediately the pedal reflex disappeared; it was concluded that CO2 without O2 was not a suitable short-term anaesthetic for rats. In a second study, rats were anaesthetized in atmospheres of 50:50 and 80:20 (CO2:O2) provided from commercially available cylinders, in 2 different environments—a 3.41 glass jar and a 171 plastic bin. Rats became excited in the plastic bin but not the glass jar. Rats in the glass jar displayed visible depression and cessation of whiskers movement significantly more quickly in the 80:20 (CO2:O2) than in the 50:50 mixture (4.2 +/- 0.98 s, n = 6, and 66.0 +/- 4.9 s, n = 6 vs 13.8 +/- 2.77 s, n = 5 and 152.0 +/- 20.8 s, n = 5, respectively). Rats in the 171 plastic bin lost their pedal reflexes in a mean 41.5 +/- 5.55 s (n = 11) in the 50:50 mixture and in a mean 30.9 +/- 6.4 s (n = 11) in the 80:20 (CO2:O2) group. Those left in the 50:50 mixture for 60 s and 180 s after disappearance of their pedal reflexes, recovered these reflexes in 20.2 +/- 0.44 s and 21.5 +/- 7.23 s respectively after removal from the gas. Respiration and heart beat ceased in one rat remaining in the 50:50 mixture after 13 min 10 s. No untoward effects occurred in rats left in the 50:50 mixture for 180 s after disappearance of the pedal reflex, but 2 died when left for an equivalent period in the 80:20 mixture. In the third study, examples of the practical use of a 50:50 mixture as a short term restraint anaesthetic are described. It was concluded that this mixture was a cheap, safe, and effective means of sh
Abstract: Cardiovascular effects of IV administered ketamine (10 mg/kg) and midazolam (0.5 mg/kg) were determined in 12 healthy isoflurane-anesthetized (1.7% end-tidal concentration) dogs. Six dogs received a ketamine-midazolam combination (K-M) as a bolus over 30 seconds and 6 dogs received K-M as an infusion over 15 minutes. Ketamine-midazolam combination as a bolus and an infusion caused early significant (P < 0.05) reductions in mean systemic blood pressure, cardiac index, and stroke index, which returned to baseline values near the end of the study. Heart rate decreased significantly (P < 0.05) in dogs of the infusion group and returned to the baseline value near the end of the study. One dog died after K-M bolus administration. Mean maximal decreases from baseline for systemic blood pressure, cardiac index, and stroke index were significantly (P < 0.05) greater in dogs of the bolus group than in dogs of the infusion group; therefore, cardiovascular effects of K-M after infusion were less severe than those after bolus. Base excess and pH decreased significantly (P < 0.05) in the infusion group, although similar changes occurred in both groups. Four dogs were maintained with 1.7% end-tidal isoflurane to determine temporal effects of isoflurane; these dogs did not receive K-M. Increases in heart rate, cardiac index, stroke index, and left and right ventricular stroke work indexes were significant (P < 0.05) at various sample collection intervals, particularly during the later stages of the study. Isoflurane anesthesia effectively blocked the cardiostimulatory properties of K-M. Ketamine-midazolam combination should be used cautiously during isoflurane anesthesia, and administration by slow infusion may be safer than by rapid bolus administration.
0.1 mg/kg in non-Greyhounds) was administered, followed by
continuous infusion at a rate of 0.4 mg/kg/min for 60 minutes,
during which time dogs breathed 100% oxygen. In 23% of all
dogs (3 of 13), apnea developed after initial bolus
administration of propofol. Arterial blood pressure was well
maintained in all dogs, but heart and respiratory rates were
decreased significantly (P < 0.05) during the infusion in
Greyhounds. In Greyhounds, mild respiratory acidosis developed
after 45 minutes, whereas arterial carbon dioxide tension was
increased at all times after propofol administration in non-
Greyhounds. In all dogs, PCV and total plasma proteins were
unaffected by propofol. Rectal temperature decreased during
infusion. Muscle tremors were observed in approximately 50%
of dogs (3 of 6 Greyhounds and 3 of 7 non-Greyhounds)
during and after infusion of propofol. Non-Greyhounds lifted
their heads, assumed sternal recumbency, and stood 10 +/- 1,
15 +/- 3, and 28 +/- 5 minutes, respectively, after the end of
the infusion; in Greyhounds, the corresponding times were 36
+- 4, 43 +/- 6, and 63 +/- 7 minutes.

Cardiopulmonary effects of halothane anesthesia in cats.
Grandy, J.L.; Hodgson, D.S.; Dunlop, C.I.; Curtis, C.R.;
Heath, R.B. Schaumburg, Ill. : American Veterinary Medical
Association; 1989 Oct. American journal of veterinary research
Language: English
Descriptors: Cat; Anesthesia; Halothane; Ventilation;
Respiration rate; Cardiovascular system
Abstract: The cardiopulmonary effects of 2 planes of
halothane anesthesia (halothane end-tidal concentrations of
1.78% [light anesthesia] and 2.75% [deep anesthesia]) and 2
ventilatory modes (spontaneous ventilation [SV] or
mechanically controlled ventilation [CV]) were studied in 8
cats. Anesthesia was induced and maintained with halothane in
O2 only, and each cat was administered each treatment
according to a Latin square design. Cardiac output, arterial
blood pressure, pulmonary arterial pressure, heart rate,
respiratory frequency, and PaO2, PaCO2, and pH were measured
during each treatment. Stroke volume, cardiac index, and total
peripheral resistance were calculated. A probability value of
less than 5% was accepted as significant. In the cats, cardiac
output, cardiac index, and stroke volume were reduced by deep
anesthesia and CV, although only the reduction attributable to
CV was significant. Systemic arterial pressure was
significantly reduced by use of deep anesthesia and CV.
Respiratory frequency was significantly lower during CV than
during SV. Arterial P(O2) was significantly decreased at the
deeper plane of anesthesia, compared with the lighter plane.
At the deeper plane of anesthesia, arterial P(CO2) and
pulmonary arterial pressure were significantly lower during CV
than during SV. The deeper plane of halothane anesthesia
depressed cardiopulmonary function in these cats, resulting in
hypotension and considerable hypercapnia. Compared with SV, CV
significantly reduced circulatory variables and should be used
with care in cats. Arterial blood pressure was judged to be
more useful for assessing anesthetic depth than was heart rate
or respiratory frequency.

Cardiopulmonary effects of halothane in hypovolemic dogs.
Pascoe, P.J.; Haskins, S.C.; Ilkiw, J.E.; Patz, J.D.
Schaumburg, Ill. : American Veterinary Medical Association;
Language: English
Descriptors: Dogs; Halothane; Cardiovascular system;
Respiratory system; Hypovolemia; Anesthesia; Blood pressure
Abstract: Cardiopulmonary effects of halothane administration
were studied in hypovolemic dogs. Baseline cardiopulmonary
data were recorded from conscious dogs after instrumentation.
Hypovolemia was induced by withdrawal of blood from dogs until
mean arterial pressure of 60 mm of Hg was achieved. Blood
pressure was maintained at 60 mm of Hg for 1 hour, by further removal or replacement of blood. Halothane was delivered by face mask, dogs were intubated, then halothane end-tidal concentration of 1.13 +/- 0.02% was maintained, and cardiopulmonary effects were measured 3, 15, 30, and 60 minutes later. After blood withdrawal and prior to halothane administration, systemic vascular resistance index, oxygen extraction, and base deficit increased. Compared with baseline values, these variables were decreased: mean arterial pressure, mean pulmonary arterial pressure, pulmonary arterial occlusion pressure, cardiac index, oxygen delivery index, oxygen consumption index, mixed venous oxygen tension, mixed venous oxygen content, venous admixture, arterial bicarbonate concentration, and mixed venous pH. At all times after intubation, arterial and venous oxygen tensions and mixed venous carbon dioxide tensions were increased. Three minutes after intubation, base deficit and mixed venous carbon dioxide tension increased, and mean arterial pressure and arterial and venous pH decreased, compared with values measured immediately prior to halothane administration. Fifteen minutes after intubation, systemic vascular resistance index decreased and, at 15 and 30 minutes, mean arterial pressure and arterial and venous pH remained decreased. At 60 minutes, mean arterial pressure and pulmonary arterial occlusion pressure were increased and mixed venous pH was decreased, compared with values measured before halothane administration. Results of this study indicated that induction of anesthesia with halothane and maintenance at an end-tidal halothane concentration of 1.13% induced significant changes in blood pressure, with minimal effects on cardiac output and pulmonary function, when administered to hypovolemic dogs.


Language: English

Descriptors: Cats; Fentanyl; Medetomidine; Conduction anesthesia; Inhaled anesthetics; Drug effects; Cardiovascular system; Respiratory system; Blood pressure; Heart rate; Respiration rate; Respiratory gases; Bicarbonates; Ph; Blood


Language: English

Descriptors: Dogs; Inhaled anesthetics; Stomach diseases; Cardiovascular system; Heart rate; Blood pressure; Respiration

Abstract: Gastric dilatation was experimentally induced in 6 anesthetized dogs maintained with constant-dose isoflurane in oxygen. An intragastric balloon was used to distend the stomach with a constant 30 mm of Hg for 3.5 hours. The PaCO2, was maintained between 35 and 45 mm of Hg, using intermittent positive-pressure ventilation. Cardiopulmonary measurements prior to stomach distension (baseline) were compared with measurements taken during 0.1, 0.5, 1.0, 1.5, 2.5, and 3.5 hours of stomach distension by analyzing the change from baseline in a randomized-block analysis with each dog as a block. After distending the stomach, cardiac index increased (P < 0.01) from 1.5 to 3.5 hours. Stroke volume did not change, thus the increase in the, cardiac index was attributable to an increase in heart rate. During inflation, increases were observed in systemic arterial, pulmonary arterial, and right atrial pressure. Respiratory frequency was unchanged; however, to maintain PaCO2, constant, it was necessary to progressively increase peak airway pressure.
Although PaO2 tended to decrease during gastric dilation, the dogs were never hypoxemic. These results indicate that when our methods are used to maintain a constant anesthetic dose of isoflurane in oxygen, an observed increase in cardiovascular performance is expected. This differs from other studies in anesthetized dogs that have shown reduction in cardiovascular performance following gastric dilatation.

Cardiorespiratory effects of combined midazolam and butorphanol in isoflurane-anesthetized cats.
Gross, M.E.; Smith, J.A.; Tranquilli, W.J.
Hagerstown, Md.: J.B. Lippincott Company; 1993 Mar.
Language: English
Descriptors: Cats; Neuroleptics; Drug combinations; Anesthesia

Cardiorespiratory effects of four opioid-tranquilizer combinations in dogs. Jacobson, J.D.; McGrath, C.J.; Smith, E.P.
Language: English
Descriptors: Dogs; Opioids; Neuroleptics; Drug combinations; Drug effects; Heart rate; Blood pressure; Blood; Ph; Gases; Arrhythmia; Anesthesia

Cardiorespiratory effects of glycopyrrolate-butorphanol-xylazine combination, with and without nasal administration of oxygen in dogs.
Jacobson, J.D.; McGrath, C.J.; Ko, C.H.; Smith, E.P.
Language: English
Descriptors: Dogs; Drug combinations; Parasympatholytics; Analgesics; Xylazine; Drug effects; Cardiovascular system; Oxygen
Abstract: Cardiopulmonary consequences of IV administered glycopyrrolate (0.01 mg/kg of body weight), followed in 11 +/- 2 minutes by butorphanol (0.2 mg/kg) and xylazine (0.5 mg/kg), were evaluated in 6 dogs, with and without nasal administration of oxygen (100 ml/kg/min). Glycopyrrolate caused significant (P < 0.05) increases in heart rate and cardiac index and significant (P < 0.05) decreases in stroke index. Subsequent administration of butorphanol and xylazine was associated with significant (P < 0.05) increases in systemic vascular resistance, mean arterial blood pressure, mean pulmonary artery pressure, central venous pressure, pulmonary wedge pressure, PaCO2, venous admixture, oxygen extraction ratio, and hemoglobin concentration. It caused significant (P < 0.05) decreases in cardiac index, stroke index, breathing rate, minute volume index, oxygen delivery, and oxygen consumption. Mean arterial blood pressure, pulmonary vascular resistance, tidal volume index, and minute volume index were significantly (P < 0.05) higher when dogs were breathing room air. The arterial and venous PO2, and PCO2, and venous oxygen content were significantly (P < 0.05) higher, and the arterial and venous pH, and oxygen consumption were significantly (P < 0.05) lower when oxygen was administered. Pulsus alternans and S-T segment depression were observed in dogs of both groups. Ventricular premature contractions were observed in 1 dog breathing room air. All dogs were intubated briefly 15 minutes after administration of butorphanol and xylazine. Time to first spontaneous movement was 45 minutes. All dogs remained in lateral recumbency without physical restraint for 60 minutes.
Cardiorespiratory effects of induction and maintenance of anesthesia with ketamine-midazolam combination, with and without prior administration of butorphanol or oxymorphone.

Jacobson, J.D.; McGrath, C.J.; Smith, E.F.


Language: English

Descriptors: Dogs; Anesthesia; Ketamine; Benzodiazepines; Drug combinations; Preanesthetic medication; Opioids; Cardiovascular system; Respiratory system; Drug effects

Abstract: Cardiorespiratory effects of an IV administered bolus of ketamine (7.5 mg/kg of body weight) and midazolam (0.375 mg/kg) followed by IV infusion of ketamine (200 micrograms/kg/min) and midazolam (10 micrograms/kq/min) for 60 minutes was determined in 6 dogs. Ketamine-midazolam combination was administered to dogs on 3 occasions to determine effects of prior administration of IV administered saline solution (1 ml), butorphanol (0.2 mg/kg), or oxymorphone (0.1 mg/kg). The infusion rate of ketamine and midazolam was decreased by 25% for anesthetic maintenance after opioid administration. There were no significant differences in cardiorespiratory variables after saline solution or butorphanol administration; however, oxymorphone caused significant (P < 0.05) increases in mean arterial blood pressure, systemic vascular resistance, and breathing rate. Bolus administration of ketamine-midazolam combination after saline solution caused significant (P < 0.05) increases in heart rate, mean arterial blood pressure, cardiac index, mean pulmonary blood pressure, venous admixture, and significant decreases in stroke index, pulmonary capillary wedge pressure, arterial and mixed venous oxygen tension, arterial oxygen content, and alveolar-arterial oxygen gradient. Opioid administration was associated with significantly (P < 0.05) lower values than was saline administration for heart rate, mean arterial blood pressure, and arterial and mixed venous pH and with higher values for stroke index, pulmonary capillary wedge pressure, and arterial and mixed venous carbon dioxide tension. Prior oxymorphone administration resulted in the highest (P < 0.05) values for mean pulmonary blood pressure, venous admixture, and arterial and mixed venous carbon dioxide tension, and the lowest values for arterial oxygen tension, and arterial and mixed venous pH. Each treatment provided otherwise uncomplicated anesthetic induction, maintenance, and recovery. Time to extubation, sternal recumbency, and walking with minimal ataxia was similar for each treatment.
dogs of the bolus group than in dogs of the infusion group. Duration of action of K-M for chemical restraint was short. Salivation and defecation were observed in a few dogs. Extreme muscular tone developed in 1 dog after K-M bolus administration.


Language: English
Descriptors: Dogs; Respiration; Heart rate; Benzodiazepine; Cycloheximide; Anesthetics; Drug combinations


Language: English
Descriptors: Dogs; Anesthetics; Dosage effects
Abstract: Cardiopulmonary effects of propofol were studied in hypovolemic dogs from completion of, until 1 hour after administration. Hypovolemia was induced by withdrawal of blood from dogs until mean arterial pressure of 60 mm of Hg was achieved. After stabilization at this pressure for 1 hour, 6 mg of propofol/kg of body weight was administered IV to 7 dogs, and cardiopulmonary effects were measured. After blood withdrawal and prior to propofol administration, oxygen utilization ratio increased, whereas mean arterial pressure, mean pulmonary arterial pressure, central venous pressure, pulmonary capillary wedge pressure, cardiac index, oxygen delivery, mixed venous oxygen tension, and mixed venous oxygen content decreased from baseline. Three minutes after propofol administration, mean pulmonary arterial pressure, pulmonary vascular resistance, oxygen utilization ratio, venous admixture, and arterial and mixed venous carbon dioxide tensions increased, whereas mean arterial pressure, arterial oxygen tension, mixed venous oxygen content, arterial and mixed venous pH decreased from values measured prior to propofol administration. Fifteen minutes after propofol administration, mixed venous carbon dioxide tension was still increased; however by 30 minutes after propofol administration, all measurements had returned to values similar to those measured prior to propofol administration.


Language: English
Descriptors: Rats; Radiation; Ketamine; Anesthesia; Body temperature; Heart rate; Blood pressure; Strain differences
Abstract: Sprague-Dawley rats were exposed to 2.8-GHz radiofrequency radiation, first while unanesthetized and then while anesthetized with ketamine (150 mg/kg, I.M.). Irradiation at a power density of 60 mW/cm2 (whole-body average specific absorption rate of approximately 14 W/kg) was conducted for sufficient duration to increase colonic temperature from 38.5 to 39.5 degrees C. The time required for the temperature increase was significantly longer in the anesthetized state. During irradiation, heart rate increased...
significantly both with and without anesthesia, while mean arterial blood pressure increased only when the rats were unanesthetized. The heart rate increase in the anesthetized state contrasts with a lack of change in a previous study of Fischer rats. This difference between anesthetized Sprague-Dawley and Fischer rats should be considered when comparing cardiovascular data obtained from these two strains of rats.

88 NAL Call. No.: SF911.V43
Cardiovascular effects of a continuous two-hour propofol infusion in dogs: comparison with isoflurane anesthesia.
Keegan, R.D.; Greene, S.A.
Hagerstown, Md.: J.B. Lippincott Company; 1993 Nov.
Language: English
Descriptors: Dogs; Injectable anesthetics; Inhaled anesthetics

89 NAL Call. No.: 41.8 AM3A
Cardiovascular effects of butorphanol administration in isoflurane-O2 anesthetized healthy dogs.
Tyner, C.L.; Greene, S.A.; Hartsfield, S.M.
Language: English
Descriptors: Dogs; Analgesics; Cardiovascular system; Drug effects; Anesthetics
Abstract: Cardiovascular consequences of butorphanol tartrate (0.2 mg/kg of body weight, IV) administration during isoflurane (1.7% end-tidal concentration) anesthesia were determined in mechanically ventilated healthy dogs. Butorphanol administration caused significant (P less than or equal to 0.05) reductions in mean, systolic, and diastolic arterial blood pressures; cardiac output; and rate-pressure product.

90 NAL Call. No.: 41.8 AM3A
Cardiovascular effects of butorphanol in halothane-anesthetized dogs. Greene, S.A.; Hartsfield, S.M.; Tyner, C.L.
Language: English
Descriptors: Dogs; Analgesics; Halothane; Anesthesia; Cardiovascular system; Detoxicants
Abstract: Cardiovascular effects of butorphanol (0.2 mg/kg of body weight, IV) and responses associated with subsequent administration of naloxone (0.04 mg/kg, IV) were studied in halothane (1.2% end-tidal concentration)-anesthetized dogs. Transient, but statistically significant (P < 0.05), decreases in heart rate, mean and diastolic arterial blood pressures, and rate-pressure product were observed after butorphanol administration. Cardiac index, stroke volume, and systemic vascular resistance did not change significantly. Except for the decrease in heart rate, changes in the values of the cardiovascular variables measured after butorphanol administration did not appear to be clinically relevant. Sixty minutes after butorphanol administration, naloxone was given. Statistically significant (P < 0.05) increases in heart rate, arterial blood pressures, cardiac index, and rate-pressure product, along with dysrhythmias were observed. Stroke volume and systemic vascular resistance remained unchanged after administration of naloxone. Naloxone administration was associated with changes indicative of increased myocardial oxygen consumption.

91 NAL Call. No.: 41.8 AM3A
Cardiovascular effects of vasopressors in halothane-
anesthetized dogs before and after hemorrhage.


Language: English

Descriptors: Dogs; Halothane; Anesthesia; Sympathomimetics; Vasoconstrictor agents; Hemorrhage; Cardiovascular system

Abstract: Exogenously administered vasopressors (sympathomimetics) were evaluated in halothane-anesthetized dogs to determine the effects of these drugs on cardiovascular function before and after hemorrhage. Six dogs were anesthetized with thiamylal sodium (20 mg/kg of body weight) and halothane (1.25 minimal alveolar concentration) in 100% oxygen. After instrumentation, cardiac output, systemic arterial blood pressure (SAP), heart rate (HR), left ventricular pressure, pulmonary arterial pressure, and an index of cardiac contractility (dP/dT) were measured. Stroke volume, cardiac index (CI), stroke index (SI), rate-pressure product, and systemic vascular resistance (SVR) were calculated. Epinephrine (0.1, 0.3, and 0.5 micrograms/kg/min [low, medium, and high doses, respectively]) and dobutamine (1, 5, and 10 micrograms/kg/min [low, medium, and high doses, respectively]) were infused. Methoxamine was given in a bolus of 0.22 mg/kg, IV. All measurements were taken at 2.5 minutes after infusion, and were repeated after removal of 40% of the estimated blood volume. Dobutamine administered at the low dose before hemorrhage increased SAP and dP/dT. At the high and medium dose, dobutamine significantly increased CI, dP/dT, and SAP with no significant change in HR or SVR. The medium dose of epinephrine was the most effective dose of epinephrine at increasing key variables (CI, SI, dP/dT). The response of CI and SI to this dose was not significantly different from the changes seen with high-dose administration of dobutamine. The dP/dT was significantly lower with epinephrine than with dobutamine, and HR was unchanged with epinephrine, except at the low dose, which decreased SVR. Methoxamine significantly decreased CI, SVR, and HR, whereas SVR and SAP were increased significantly. After hemorrhage, the only variables that had a significant change in the absolute magnitude of the response to a drug, relative to the response before hemorrhage, were a significantly reduced abil...
increase to the greatest degree by administration of high
doses of dobutamine. Administration of the low dose of
dobutamine increased dP/dT, whereas administration of the low
dose of epinephrine increased CI, HR, and SI, and decreased
SVR. The HR and SVR were not increased by administration of
any dose of dobutamine or of the medium and high doses of
epinephrine. However, methoxamine increased SVR and decreased
HR. Methoxamine decreased CI, SI, and dP/dT, but increased
systemic arterial pressure to the same degree as that
attributed to administration of high doses of dobutamine and
epinephrine. After hemorrhage, effectiveness of the drugs in
eliciting a response was unchanged, except for a decreased
ability of dobutamine to increase rate-pressure product. For
Cardiovascular function and serum catecholamine concentrations
after anesthesia and surgery in the dog.
Rawlings, C.A.; Tackett, R.L.; Bjorling, D.E.; Arnold, T.H. Jr
references.
Language:  English
Descriptors: Dogs; Anesthesia; Surgical operations; Pain;
Thermoregulation; Cardiovascular system; Catecholamines; Blood
serum; Blood flow; Body temperature
Cardiovascular responses to intracerebroventricular infusion
of artificial cerebrospinal fluid in anesthetized strain 13
guinea pigs. Liu, C.T.; Guo, Z.M.
Cordova, Tenn.: American Association for Laboratory Animal
Language:  English
Descriptors: Guinea pigs; Cerebrospinal fluid; Infusion;
Cerebral ventricles; Internal pressure; Blood pressure; Heart
rate; Drug delivery systems
Abstract: The cardiovascular effects of constant
intracerebroventricular infusion in anesthetized strain 13
guinea pigs were studied. Bilateral cerebroventricles of the
animals were catheterized stereotaxically with two 20-gauge
blunt needles, penetrating 5 to 6 mm into the skull. Baseline
cerebroventricular pressure values were 1.3 +/- 0.6 mmHg.
After artificial cerebrospinal fluid was infused into the left
cerebroventricular pressure increased to 8.1 +/- 1.6 mmHg (P < 0.01), while right
cerebroventricular pressure reached 5.6 +/- 2.2 mmHg within 20
minutes. No significant changes in mean blood pressure or
heart rate were observed. When intracerebroventricular
infusion rate increased to 5.0 ml/h, cerebrospinal fluid
pressures of left and right cerebroventricles increased to
40.0 +/- 4.8 and 38.4 +/- 4.7 mmHg within 10 minutes from
baseline values of 1.5 +/- 0.5 and 1.7 +/- 0.7 mmHg,
respectively. Simultaneously, mean blood pressure and heart
rate increased from 72 +/- 4 to 101 +/- 9 mmHg and from 195
+/- 11 to 218 +/- 17 beats/min, respectively. However, 30 to
50 minutes later, cerebrospinal fluid pressure decreased abruptly, and two of
four animals died. We suggest that this technique with a low
infusion rate (< 0.5 ml/h) can be used to deliver certain
drugs into the brain ventricles directly without producing
undesirable effects on blood pressure or heart rate.
The Care and use of amphibians, reptiles, and fish in
research. Schaeffer, Dorcas O.; Kleinow, Kevin M.; Krulisch,
Lee
Scientists Center for Animal Welfare, Louisiana State
University (Baton Rouge, La.), School of Veterinary Medicine
Bethesda, Md. (4805 St. Elmo Ave., Bethesda 20814) :
vii, 196 p.: ill. ; 28 cm. Proceedings from a SCAW/LSUSVM-
sponsored conference ... held April 8-9, 1991 in New Orleans,
Louisiana ... November 1992. Includes bibliographical references.

Language: English

Descriptors: Amphibians as laboratory animals; Reptiles as laboratory animals; Fish as laboratory animals

96 NAL Call. No.: SF911.V43
Changes in cardiopulmonary variables and platelet count during anesthesia for total hip replacement in dogs.
Otto, K.; Matis, U.

Language: English

Descriptors: Dogs; Hips; Prostheses; Anesthesia; Platelet count; Surgery; Methodology; Adhesives; Cardiovascular system; Respiratory system

97 NAL Call. No.: QP631.N37
Characteristics of paralytic shellfish poisoning toxins derived from short-necked clams (Tapes japonica) in Mikawa Bay.
Okumura, M.; Yamada, S.; Oshima, Y.; Ishikawa, N.

Language: English

Descriptors: Japan; Cabt; Clams; Tapes; Plankton; Toxins; Toxicity; Bioassays; Mice

98 NAL Call. No.: 41.8 V6456
Children's pets (excluding the rabbit).
Taylor, N.R.
London: Wright; 1990.
The Veterinary annual (30): p. 335-341; 1990.

Language: English

Descriptors: Hamsters; Golden hamsters; Cricetulus; Phodopus; Gerbils; Meriones libycus; Meriones unguiculatus; Guinea pigs; Mice; Mus musculus; Rats; Rattus norvegicus; Pet care; Anesthesia; Antibiotics; Dosage; Water intake; Antifungal agents; Antiparasitic agents

99 NAL Call. No.: SF915.J63
Cisternal CSF and serum concentrations of morphine following epidural administration in the dog.
Valverde, A.; Conlon, P.D.; Dyson, D.H.; Burger, J.P.

Language: English

Descriptors: Dogs; Morphine; Conduction anesthesia; Blood serum; Cerebrospinal fluid

100 NAL Call. No.: 41.8 J8292
Clinical effectiveness of atipamezole as a medetomidine antagonist in cats. Vaha-Vahe, A.T.
London: British Small Animal Veterinary Association; 1990 Apr.

Language: English

Descriptors: Cat; Analgesics; Detoxicants; Drug antagonism; Drug effects; Adverse effects; Dosage effect
The clinical effectiveness of atipamezole as a medetomidine antagonist in the dog.

Vaha-Vahe, A.T.

Language: English
Descriptors: Dogs; Analgesics; Narcotic antagonists; Dosage; Drug antagonism; Adverse effects

Clinical evaluation of propofol as an intravenous anaesthetic agent in cats and dogs.

Morgan, D.W.T.; Legge, K.

Language: English
Descriptors: Cat; Dogs; Anesthetics; Anesthesia; Safety; Adverse effects; Pharmacology

Clinical observations on medetomidine/ketamine anaesthesia and its antagonism by atipamezole in the cat.

Young, L.E.; Jones, R.S.

Language: English
Descriptors: Cats; Anesthesia; Anesthetics; Ketamine; Drug antagonism; Antagonists

Closed system delivery of halothane and isoflurane with a vaporizer in the anesthetic circle.

Bednarski, R.M.; Muir, W.W. III
Hagerstown, Md. : J.B. Lippincott Company; 1991 Sep.

Language: English
Descriptors: Dogs; Anesthesia; Halothane; Surgical equipment

Coaxial anaesthetic circuits in small animals.

Cullen, L.K.

Language: English
Descriptors: Dogs; Cat; Anesthesia; Circuits; Values; Gases; Flow

Comparative effects of xylazine and propofol on the urethral pressure profile of healthy dogs.

Combrisson, H.; Robain, G.; Cotard, J.P.

Language: English
Descriptors: Dogs; Xylazine; Injectable anesthetics; Drug effects; Urethra; Pressure
Abstract: The effects of 2 drugs, xylazine and propofol, on the urethral pressure profile were compared. Seven female dogs were sedated by administration of one drug, then the other, and urethral variables were measured. In the dogs sedated with propofol, the mean +/- SD, maximal urethral closure pressure (51 +/- 7.4 cm of H2O) was significantly (P < 0.05) higher than the value when dogs were sedated with xylazine (23.3 +/- 7.6 cm of H2O). Results were compared with those obtained by various authors, in particular for nonsedated dogs. It is concluded that propofol is a good drug for investigation of the urethral pressure profile, whatever its effect on maximal urethral closure pressure.
sheep, 720.0 +/- 306.7 ml/kg; dogs, 597.7 +/- 290.2 ml/kg) and rapid systemic clearance (rabbits, 19.4 +/- 5.3 ml/min/kg; sheep, 13.3 +/- 3.0 ml/min/kg; dogs, 18.7 +/- 7.5 ml/min/kg). On the basis of these pharmacokinetic variables, alfentanil should have short duration of action in rabbits, sheep, and dogs. This may be beneficial in veterinary practice where rapid recovery would be expected after bolus administration for short procedures or after infusion for longer procedures.


Language: English

Descriptors: Dogs; Adrenalin; Anesthetics; Heart diseases; Dirofilaria immitis; Nematode control

Abstract: The arrhythmogenic dose of epinephrine (ADE) was determined in heartworm-infected and noninfected (control) dogs during thiamylal-induced and halothane-maintained anesthesia to assess the myocardial sensitization. The ADE in heartworm-infected dogs (2.42 +/- 0.26 micrograms/kg of body weight) was significantly lower than that for the controls (3.36 +/- 0.29 micrograms/kg). After 2 weeks, ADE was determined again in these dogs after atropine treatment. Atropine treatment lowered the ADE to 1.76 +/- 0.33 micrograms/kg and 1.77 +/- 0.19 micrograma/kg in heartworm-positive and negative dogs, respectively. After 2 weeks more the ADE was determined after administration of prazosin, an alpha 1-antagonist. Only 2 of 6 controls and 3 of 6 heartworm-positive dogs had arrhythmias after a threefold increase of ADE. The mean ADE in the dogs that responded to treatment were 7.4 micrograms/kg and 7.2 micrograms/kg for heart worm-positive and negative dogs, respectively. The findings of this study indicated that ADE in heartworm-infected dogs were lower than those in the control dogs, which makes the heartworm-infected dogs more vulnerable to arrhythmia during anesthesia. Atropine did not protect the dogs of either group. However, prazosin protected the dogs of both groups by significantly increasing the threshold of the ADE. On the basis of our findings, to reduce the risk of arrhythmia, we suggest that routine screening of dogs for heartworm infection be done before anesthetics are used.


Language: English

Descriptors: Dogs; Cerebrospinal fluid; Anesthesia


Language: English

Descriptors: Dogs; Blood pressure; Pulse rate; Measurement; Tarsus; Carpus; Monitors; Catheters; Aorta

Abstract: This study was conducted to determine whether blood pressures and pulse rate could be determined accurately by indirect measurements from the front and hind legs of 15- to
40-kg dogs anesthetized with isoflurane. Indirect measurements from each animal were compared to direct measurements obtained from a catheter placed into the abdominal aorta via the femoral artery at four ranges of systolic pressure. When systolic pressure was above 80 mm Hg, indirect measurements were either the same as direct measurements or slightly lower. However, when systolic pressures were below 80 mm Hg, indirect systolic pressure measurements were 6 to 15% higher than direct measurements. Larger differences in diastolic pressures were found, which resulted in differences in mean pressure. The most accurate measurements were found when the cuff width-to-limb circumference ratio was between 0.4 and 0.6 and when systolic pressure was between 80 and 100 mm Hg.
lungs in both types of dogs, and in the more cranial zones in
the lungs of Beagles. However, the degree of intraregional
mismatching was generally lower in Greyhound-type dogs. Thus,
the gravitational force is not the dominating determinant of
interregional or intraregional inhalation-to-perfusion ratio
distributions in the lungs of anesthetized prone dogs. Its
influence is modulated by other factors morphologic
characteristics, such as the shape and size of the thorax, and
body weight of the dog. In particular, the height of the
thorax in Greyhound-type dogs could permit the gravitational
force to exert a more determinant influence than it does in Beagle

116                                   NAL Call. No.: 410.9 P94
A comparison of ketamine/xylazine and
ketamine/xylazine/acepromazine anesthesia in the rabbit.
Lipman, N.S.; Marini, R.P.; Erdman, S.E.
Cordova, Tenn. : American Association for Laboratory Animal
395-398; 1990 Jul.  Includes references.
Language:  English
Descriptors: Rabbits; Anesthesia; Drug combinations; Ketamine;
Xylazine; Preanesthetic medication; Neuroleptics
Abstract:  Parenteral anesthetic combinations such as ketamine
and xylazine have become the agents of choice for anesthesia
in the rabbit, because they are effective, easily administered
and inexpensive. A number of recent reports have recommended
including acepromazine in this combination, but a critical
evaluation of this combination in the rabbit has not been
reported. Five adult New Zealand white rabbits were
anesthetized intramuscularly with ketamine (35 mg/kg) and
xylazine (5 mg/kg) with or without acepromazine (0.75 mg/kg).
The study was conducted in a double blind fashion, where each
rabbit was administered both combinations at a minimum of 7
day intervals. Physiologic parameters were evaluated including
heart rate, respiratory rate, central arterial blood pressure,
pedal, palpebral and postural reflex activity. The duration of
general anesthesia, estimated by the time elapsed between the
loss and return of the palpebral reflex, was greater (mean =
99 +/- 20 minutes) when acepromazine was employed in the
combination compared to (mean = 77 +/- 5 minutes) when
ketamine/xylazine were used alone. Mean central arterial blood
pressure reached a lower level when acepromazine was utilized
(mean = 46 +/- 8 mm/Hg) than when it was not (mean = 57 +/- 12
mm/Hg.) The addition of acepromazine in a ketamine/xylazine
combination resulted in a 28% longer period of anesthesia, a
19% lower mean central arterial blood pressure and a 32%
longer recovery of postural reflexes. The
ketamine/xylazine/acepromazine combination is a useful regimen
for normovolemic animals when anesthetic duration greater than
that produced by ketamine/xylazine alone is required.

117                                   NAL Call. No.: 41.8 AM3A
Comparison of left ventricular ejection fractions determined
in healthy anesthetized dogs by echocardiography and gated
equilibrium radionuclide ventriculography.
Sisson, D.D.; Daniel, G.B.; Twardock, A.R.
Schaumburg, Ill. : American Veterinary Medical Association;
1989 Nov. American journal of veterinary research v. 50 (11):
p. 1840-1847. ill; 1989 Nov.  Includes references.
Language:  English
Descriptors: Dogs; Ventricles; Anesthesia; Echocardiography;
Radionuclides; Radiography; Regression analysis
Abstract:  Left ventricular ejection fractions (LVEF) of 8
pentobarbital-anesthetized dogs were calculated by gated
equilibrium radionuclide ventriculography (RVG) and by M-mode
and two-dimensional echocardiography (2-DE) prior to and
during constant IV infusion of isoproterenol. Mean LVEF (+/-
SD), determined with RVG by use of an automatic edge detection
algorithm (RVG-auto) to define the left ventricular region of
interest increased from a resting value of 53.5% (+/- 4.9%) to
71.9% (+/-6.8%) during isoproterenol infusion. Mean LVEF,
determined with RVG by use of visual inspection (RVG-manual)
to define the left ventricular region of interest increased from a resting value of 51.6% +/- 3.8% to 67.0% +/- 5.6% during isoproterenol infusion. Using 2-DE and the bullet formula to calculate left ventricular volume (LVV = 5/6 X cross-sectional area X length), mean LVEF increased from 52.3% (+/- 3.50) to 74.7% (+/- 5.0%). Using 2-DE area measurements and Teicholz formula, mean LVEF increased from 48.9% (+/- 5.1%) to 69.5% (+/- 6.0%). Using M-mode echocardiographic left ventricular diameter measurements and Teicholz formula, mean LVEF increased from 52.3 (+/- 0.90%) to 78.3% (+/- 8.1%).

Before and during isoproterenol infusion, the mean LVEF values calculated by RVG agreed closely with mean LVEF values calculated from M-mode and 2-DE. Correlation coefficients determined from linear regression analysis of LVEF by echocardiography vs LVEF by radionuclide ventriculography ranged from 0.79 to 0.88. Correlation coefficients were higher and SEM were lower when LVEF was determined by RVG-manual, rather than by RVG-auto methods and when LVEF was calculated from 2-DE measurements, rather than from M-mode measurements.
the longest duration of anesthesia was XAK. It was concluded that XAK was preferable for longer periods of anesthesia (60 to 120 minutes), although it induces severe hypothermia. For short periods of anesthesia, xylazine-pentobarbital, xylazine-EMTU, or ketamine-xylazine were deemed adequate; however, xylazine-EMTU induced the best survivability and consistency.

121 NAL Call. No.: SP915.J63
A comparison of the effects of buprenorphine, carprofen and flunixin following laparotomy in rats.
Liles, J.H.; Flecknell, P.A.

Language: English
Descriptors: Rats; Flunixin; Non-steroidal antiinflammatory agents; Analgesics; Laparotomy; Drug combinations; Body weight; Feed intake; Water intake; Locomotion; Pain

122 NAL Call. No.: 41.8 R3224
Comparison of the efficacy of three premedicants administered to cats. Dyson, D.H.; Pascoe, P.J.; Honeyman, V.; Rahn, J.E.

Language: English
Descriptors: Cats; Preanesthetic medication; Drug combinations; Drug effects; Anesthesia; Heart rate; Respiration rate; Catheters

123 NAL Call. No.: 41.8 AM3A
Comparison of the hemodynamic effects of halothane alone and halothane combined with epidurally administered morphine for anesthesia in ventilated dogs.

Language: English
Descriptors: Dogs; Anesthesia; Halothane; Morphine; Hemodynamics; Drug combinations

Abstract: The hemodynamic effects of 1.5 minimal alveolar concentration of halothane alone (1.6% end-tidal) and 1.5 minimal alveolar concentration of halothane (1.1% end-tidal concentration) combined with epidurally administered morphine were compared during controlled ventilation in 10 dogs used on 2 occasions and randomly allocated to 2 groups. Arterial blood pressure, cardiac index, stroke volume, left ventricular work, and pulmonary arterial pressure were significantly (P < 0.05) higher in dogs of the morphine-treated group before administration of morphine. After epidural administration of morphine (0.1 mg/kg of body weight diluted in 0.26 ml of saline solution/kg), hemodynamic changes were not observed, and the aforementioned variables remained significantly (P < 0.05) higher than values in dogs of the halothane only group. Compared with halothane (1.6%) alone, the reduction in halothane end-tidal concentration (1.1%) associated with epidurally administered morphine is beneficial in maintaining hemodynamic function.

124 NAL Call. No.: 41.8 V641
Comparison of the postoperative analgesic and sedative effects of carprofen and papaveretum in the dog.
Nolan, A.; Reid, J.

Language: English
A comparison of the postoperative analgesic and sedative effects of flunixin and papaaveretum in the dog.

Reid, J.; Nolan, A.M.
London: British Small Animal Veterinary Association; 1991


Comparison of xylazine with tiletamine-zolazepam (Telazol) and xylazine-ketamine anesthesia in rabbits.


Conditioned inhibition of analgesia.
Wiertelak, E.P.; Watkins, L.R.; Maier, S.F.
Austin, Tex.: Psychonomic Society; 1992 Nov.

events come to elicit conditioned analgesia. Experiments 1A and 1B examined the possibility that conditioning can inhibit analgesia when stimuli are paired in a backward fashion with a shock US (Pavlovian CS-s). Analgesia conditioned in response to shock context exposure was reversed during the CS- (light) presentation after four sessions. The ability of the CS- to function as a conditioned inhibitor of analgesia was then evaluated in both summation (Experiment 1A) and retardation-of-acquisition testing (Experiments 1A and 1B). The results support the conclusion that a stimulus presented after shock in a backward fashion comes to be a conditioned inhibitor of analgesia. Experiments 2A and 2B examined the assumption that the results obtained with our pain sensitivity measure (tailflicking in response to radiant heat) reflect changes in responsiveness to painful input, rather than a general motor inhibition or general insensitivity to sensory input. In Experiment 2A, tailflick responding to painful and nonpainful input was compared in animals receiving either morphine or saline. In Experiment 2B, tailflick responding to painful and nonpainful input to the tail was compared in both the shock and a neutral context. In both experiments, only the painful input yielded changes in responsivity. The results support the conclusion that the alterations in pain sensitivity produced by the CS- for shock represents a conditioned inhibition specific to pain.
Abstract: We examined the effect of dietary fish oil (MaxEPA) and sunflower seed oil on glucose tolerance in male Wistar rats. Semipurified diets containing 100 g oil/kg diet were administered for 30 d. The fish oil diet contained 26 g (n-3) fatty acids, 16 g eicosapentaenoic acid and 10.4 g docosahexaenoic acid/kg diet. Phospholipids from liver, pancreas, and pancreatic islets were enriched in eicosapentaenoic and docosahexaenoic acids by the fish oil diet. In unfed pentobarbital-anesthetized rats, both basal plasma insulin concentration and insulin responses to intravenous glucose were significantly lower for fish oil-fed rats although glucose responses were similar; however, incremental excursions in plasma insulin over the basal concentration did not differ. Intravenous glucose tolerance was also examined in conscious unfed rats under minimal restraint. Responses of plasma glucose and insulin were similar for fish oil- and sunflower oil-fed groups. Furthermore, in another experiment, intravenous glucose tolerance tests were similar for conscious rats provided with either 100 g fish oil or corn oil/kg nonpurified diet. Thus, glucose-induced insulin secretion is lower in rats fed fish oil than in rats fed sunflower oil, when tests are conducted in pentobarbital-anesthetized animals but not when tests are performed in conscious rats; there was no effect on plasma glucose in either anesthetized or nonanesthetized rats. Therefore, substitution of (n-3) for (n-6) polyunsaturated fatty acids in tissue phospholipids does not alter plasma glucose or insulin in conscious male Wistar rats.
dose) were 4 micrograms/ml and 9 micrograms/g respectively; the model shows that, at this time, 30% of the dose was lost from the central compartment by redistribution and a similar amount by metabolism. 5. Tissue profiles of total 14C and propofol diverged for highly perfused tissues (other than brain) because of slow clearance of metabolites, accentuated by enterohepatic recirculation.


 language: English

Descriptors: Dogs; Radioactive iodine; Intramuscular injection; Muscles; Distribution; Pharmacokinetics

Abstract: A radiopaque marker was injected, using needles of various lengths, into the cervical musculature, the lumbar epaxial musculature, and the cranial and caudal muscular masses of the thighs of anesthetized dogs. After this procedure, the dogs were euthanatized and deep-frozen. The bodies were then sectioned, and the slices were radiographed to determine the fate of the injected material. Material that was injected into the neck or caudal region of the thigh was determined to be located in the muscle bellies or dispensed throughout the intermuscular fascial sheaths. In contrast, material injected into the lumbar area and cranial region of the thigh was located entirely in the muscle bellies. It was concluded that the best sites for injection in dogs are the lumbar epaxial musculature or the quadriceps femoris muscle when IM administration is imperative.


Language: English

Descriptors: Ketamine; Analgesics; Diazepam; Dosage; Anesthesia; Anesthetics; Abdomen; Cats


Language: English

Descriptors: Rats; Anesthesia


Language: English

Descriptors: Dogs; Analgesics; Pain; Subcutaneous injection; Dosage; Dosage effects

Abstract: Butorphanol (0.025, 0.05, 0.1, 0.2, 0.4, and 0.8 mg/kg of body weight, and placebo) was given sc to 8 healthy unmedicated dogs to determine its efficacy for visceral
analgesia, using a colonic balloon for minimal threshold nociceptor stimulation. Degree of sedation; systolic, diastolic, and mean arterial pressure; and pulse rate were recorded. The highest 3 dosages, 0.2, 0.4, and 0.8 mg/kg, were found to be most effective, with 0.8 mg/kg the only dosage that was significantly different from control responses at the 45-minute interval. Duration of analgesia ranged from 23 to 53 minutes for all 6 dosages and dosing durations were not significantly different from one another. Blood pressures did not change, but pulse rate was significantly decreased by 0.8 mg of butorphanol/kg. We concluded that butorphanol is an effective visceral analgesic of relatively short duration in the dog.

Dose-response of intravenous butorphanol to increase visceral nociceptive threshold in dogs.

Houghton, K.J.; Rech, R.H.; Sawyer, D.C.; Durham, R.A.; Adams, T.; Langham, M.A.; Striler, E.L.

Baltimore, Md.: Williams & Wilkins; 1991 Jul.

Language: English
Descriptors: Dogs; Analgesics; Dosage; Dosage effects; Duration; Blood pressure; Pulse rate; Intravenous injection

Abstract: This study was designed to determine the effective analgesic dose of butorphanol administered intravenously to obtund visceral nociception, as well as to determine duration of this effect. Additionally, cardiovascular changes and sedative effects were defined. Eight healthy dogs were each given five doses of butorphanol (0.025, 0.05, 0.1, 0.2, and 0.4 mg/kg) plus a sterile water placebo intravenously in a randomized blinded format. Antinociception was assessed using an inflatable Silastic balloon inserted into the colon. Blood pressures and pulse rates were measured with a noninvasive monitor. The greatest efficacy and longest duration of antinociception were produced by 0.4 mg/kg of butorphanol, with a duration of 38 +/- 9 min. Arterial blood pressure and pulse rate did not vary at antinociceptive doses. Mild sedation was observed at all doses, which generally lasted longer than the antinociceptive effects. These data suggest that butorphanol can be given alone intravenously to provide visceral antinociception lasting 30-45 min without significant side effects.

Drug therapy in cats: a therapeutic category approach.

Boothe, D.M.
Schaumburg, Ill.: The Association; 1990 May15.

Language: English
Descriptors: Cat; Drug therapy; Antiinfective agents; Analgesics; Antihistaminics; Antiinflammatory agents; Hormones; Anthelmintics; Drugs

Duration of analgesia induced by epidurally administered morphine and medetomidine in dogs.


Language: English
Descriptors: Dogs; Medetomidine; Morphine
Duration of etomidate-induced adrenocortical suppression during surgery in dogs.
Dodam, J.R.; Kruse-Elliott, K.T.; Aucoin, D.P.; Swanson, C.R.

Language: English
Descriptors: Dogs; Anesthesia; Anesthetics; Surgical operations; Corticotrophin

Abstract: Plasma cortisol concentrations were compared in canine surgical patients given etomidate (2 mg/kg of body weight, IV) or thiopental sodium (12 mg/kg, IV) for anesthetic induction. Blood samples to determine plasma concentrations of etomidate were obtained at 0, 5, 10, 15, and 30 minutes and 1, 2, 3, 4, 5, 6, 8, 12, and 24 hours after induction. Adrenocortical function was evaluated before surgery by use of adrenocorticotropic hormone stimulation tests. Dogs in both induction groups had high plasma cortisol concentrations after induction. Dogs given thiopental had a significant increase (P < 0.05) in plasma cortisol concentration from baseline at 2, 3, 4, 5, 6, 8, and 12 hours after induction. Dogs given etomidate had a significant increase (P < 0.05) in plasma cortisol concentration from baseline at 5, 6, and 8 hours after induction. A comparison of plasma cortisol concentrations determined at 2, 3, 4, 5, and 6 hours after induction with thiopental or etomidate revealed a higher (P < 0.05) concentration in dogs given thiopental. The disposition of etomidate was best described by a 2-compartment model, with a redistribution half-life of 0.12 +/- 0.04 minute and a terminal half-life of 1.70 +/- 0.27 minute. Plasma cortisol concentrations did not correlate with plasma etomidate concentrations. We conclude that, compared with thiopental, a single bolus injection of etomidate reduces the adrenocortical response to anesthesia and surgery from 2 to 6 hours after induction. Because cortisol concentrations were significantly higher than baseline, and because cardiopulmonary function is maintained after a single bolus injection of etomidate, it can be considered a safe induction agent in dogs.

An easily constructed anaesthetic face mask for dogs.
Pearson, M.R.E.
London : The British Veterinary Association; 1993 Nov06.
Language: English
Descriptors: Dogs; Anesthesia

Efeitos da administracao de cloridrato de ketamina na atividade geral e na sensibilidade convulsiva de ratos [Effects of ketamine hydrochloride on open-field behavior and seizure susceptibility of rats].
Valadao, Carlos Augusto Araujo
1990; 1990.
137 leaves : ill. ; 31 cm. Summary in English. Includes bibliographical references (leaves 111-137).
Language: Portuguese
Descriptors: Veterinary anesthesia

The effect of anesthesia on the radiographic appearance of the coxofemoral joints.
Aronson, E.; Kraus, K.H.; Smith, J.
Language: English
Effect of chloramphenicol on duration of xylazine/pentobarbitone anaesthesia in dogs.
Adetunji, A.; Adewumi, J.O.A.
Ibadan, Nigeria: Faculty of Veterinary Medicine, University of Ibadan; 1990. Tropical veterinarian v. 8 (3/4): p. 149-155; 1990. Includes references.

Language: English
Descriptors: Dogs; Radiography; Hips; Hip dysplasia; Anesthesia; Joints (animal); Classification

Effect of chloramphenicol on duration of xylazine/pentobarbitone anaesthesia in dogs.
Adetunji, A.; Adewumi, J.O.A.
Ibadan, Nigeria: Faculty of Veterinary Medicine, University of Ibadan; 1990. Tropical veterinarian v. 8 (3/4): p. 149-155; 1990. Includes references.

Language: English
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Effect of chloramphenicol on duration of xylazine/pentobarbitone anaesthesia in dogs.
Adetunji, A.; Adewumi, J.O.A.
Ibadan, Nigeria: Faculty of Veterinary Medicine, University of Ibadan; 1990. Tropical veterinarian v. 8 (3/4): p. 149-155; 1990. Includes references.

Language: English
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Effect of chloramphenicol on duration of xylazine/pentobarbitone anaesthesia in dogs.
Adetunji, A.; Adewumi, J.O.A.
Ibadan, Nigeria: Faculty of Veterinary Medicine, University of Ibadan; 1990. Tropical veterinarian v. 8 (3/4): p. 149-155; 1990. Includes references.

Language: English
Descriptors: Dogs; Radiography; Hips; Hip dysplasia; Anesthesia; Joints (animal); Classification
Anesthesia and Analgesia for Companion and Laboratory Animals, QB 95-12

Abstract: Pharmacokinetic variables of propofol were investigated in 6 mixed-breed dogs, and the effect of medetomidine (10 microgram/kg of body weight) on these kinetics was investigated using a two-way crossover design. On 2 occasions, dogs received either a bolus dose of propofol sufficient to allow endotracheal intubation, followed by an infusion of propofol (0.4 mg/kg/min) for 120 minutes, or medetomidine (10 microgram/kg, IM), 15 minutes prior to induction of anesthesia as described, followed by infusion of propofol (0.2 mg/kg/min). Dogs given medetomidine received atipamezole (50 microgram/kg, IM) at the end of the 120-minute propofol infusion. Blood propofol concentration was measured, using high-performance liquid chromatography with fluorescence detection. Mean elimination half-life, blood clearance, mean residence time, and mean volume of distribution at steady state, were 486.2 minutes, 34.4 ml/kg/min, 301.8 minutes, and 6.04 L/kg, respectively, in the absence of medetomidine, and 136.9 minutes, 36.2 ml/kg/min, 215.1 minutes, and 3.38 L/kg, respectively, in the presence of medetomidine. Mean time to walking without ataxia was 174 minutes in the nonpremedicated dogs (with a median blood propofol concentration of 2.2 microgram/ml) and was 160 minutes in the premedicated dogs in which median blood propofol concentration was 1.03 microgram/ml.

Effect of midazolam preanesthetic administration on thiamylal induction requirement in dogs.
Tranquilli, W.J.; Graning, L.M.; Thurmon, J.C.; Benson, G.J.; Moum, S.G.; Lentz, E.L.

Abstract: The thiamylal sparing effect of midazolam was studied in 30 healthy Beagle and mixed-breed dogs. Using a replicated Latin square design, all dogs were given placebo (saline solution) and 0.025, 0.05, 0.1, and 0.2 mg of midazolam/kg of body weight prior to IV administration of thiamylal sodium. The 0.1 and 0.2 mg/kg dosages significantly decreased the amount of thiamylal required to obtund swallowing reflex and easily achieve endotracheal intubation. Midazolam at 0.1 and 0.2 mg/kg reduced thiamylal requirement by 16.4% and 18.9%, respectively, whereas the 0.05 mg/kg dosage decreased thiamylal requirement by only 6.8%. The 0.2 mg/kg dosage did not further decrease thiamylal requirement beyond that achieved with the 0.1 mg/kg dosage of midazolam. This study demonstrates that the preanesthetic IV administration of midazolam reduces the thiamylal dose necessary to accomplish intubation. The optimal preanesthetic dosage (lowest dosage with significant effect) was 0.1 mg/kg.

The effect of mouse euthanasia technique on subsequent lymphocyte proliferation and cell mediated lympholysis assays.
Howard, H.L.; McLaughlin-Taylor, E.; Hill, R.L.

Abstract: The purpose of this study was to determine the
effects that specific euthanasia methods have on mitogen induced lymphocyte proliferation (LP) and the induction of alloantigen specific cytolytic T-lymphocytes (CTL). Mice were euthanatized by cervical dislocation (CD), or anesthesia with methoxyflurane or pentobarbital followed by CD (M-CD or P-CD respectively), CO2 overexposure (CO2-OD) or halothane overexposure (H-OD). Mitogenic lymphoproliferation was increased in cells derived from mice euthanatized by M-CD and P-CD. In contrast, the cytolytic profile of CTL derived from mice euthanatized by P-CD, CO2-OD and H-OD was decreased. The results of this study show that euthanasia techniques involving the use of methoxyflurane, pentobarbital, CO2 and halothane affect in vitro lymphoproliferation and CTL function. We conclude that the method of euthanasia influences certain immunologic parameters and selection of a particular technique should be given careful consideration.
Effect of thiopentone and propofol on lower oesophageal sphincter and barrier pressure in the dog.
Waterman, A.E.; Hashim, M.A.
Language: English
Descriptors: Dogs; Thiopental; Injectable anesthetics; Anesthesia; Esophageal sphincter; Internal pressure; Preanesthetic medication

Effect of tiletamine/zolazepam sedation on intradermal allergy testing in atopic dogs.
Codner, E.C.; Lessard, P.; McGrath, C.J.
Schaumburg, Ill.: The Association; 1992 Dec 15.
Language: English
Descriptors: Dogs; Skin tests; Atopy; Anesthetics; Benzodiazepines; Allergens; Hypersensitivity; Temperament; Adverse effects; Histamine; Extracts

The effect of tiletamine-zolazepam anesthesia on the response to intradermally injected histamine in cats.
Mueller, R.S.; Ihrke, P.J.; Kass, P.H.; Bettenay, S.V.
Language: English
Descriptors: Cats; Anesthesia; Histamine; Injection

Effect of yohimbine on xylazine-induced diuresis in rats.
Mohammad, F.K.; Ahmed, F.A.; Al-Kassim, N.A.H.
Manhattan, Kan.: American Academy of Veterinary and Comparative Toxicology; 1989 Feb.
Language: English
Descriptors: Xylazine; Diuresis; Drug antagonism; Anesthetics; Rats

An effective combination of anaesthetics for 6-h experimentation in the golden Syrian hamster.
Reid, W.D.; Davies, C.; Pare, P.D.; Pardy, R.L.
London: Royal Society of Medicine Services; 1989 Apr.
Laboratory animals v. 23 (2): p. 156-162; 1989 Apr. Includes references.
Language: English
Descriptors: Golden hamster; Anesthetics; Drug combinations; Pentobarbital; Urethane; Chloralose; Anesthesia

Abstract: The anaesthetics described for use in hamsters to date are suitable for the performance of short-term experimentation. However, an anaesthetic regimen was required which would provide a stable preparation for 6 h and hence, a suitable combination was developed. In the first set of experiments, the effect of anaesthetics (chloralose, urethane, and pentobarbital) were examined alone and in combination on arterial blood measurements. In the second set of experiments the effect of the combination of anaesthetics on arterial
blood measurements and minute ventilation was examined for up to 6 h. Chloralose, urethane and pentobarbital when used alone in the hamster were considered inadequate for our needs. Chloralose did not produce adequate surgical anaesthesia whereas urethane and pentobarbital resulted in marked respiratory depression. Urethane also produced a trend toward metabolic acidosis. In contrast, the combination of agents resulted in surgical anaesthesia and the arterial blood measurements were adequate. Further, the use of the combination of anaesthetics in hamsters resulted in a stable preparation where arterial blood measurements and minute ventilation were maintained in a good range for up to 6 h. The combination of chloralose, urethane and sodium pentobarbital in hamsters proved useful in long-term non-recovery experimentation which requires early surgical intervention, minimal respiratory depression and an even depth of anaesthesia.


Abstract: Cardiorespiratory effects of abdominal insufflation were evaluated in 8 dogs during isoflurane anesthesia. Each dog was studied 3 times, in 1 of the following orders of insufflation pressures: 10-30-20, 20-30-10, 30-20-10, 10-30-20, 20-10-30, and 30-10-20 mm of Hg. Anesthesia was induced by use of a mask, dogs were intubated, and anesthesia was maintained by isoflurane in 100% oxygen. After instrumentation, baseline values were recorded (time 0), and the abdomen was insufflated with nitrous oxide. Data were recorded at 5, 10, 15, 20, 25, and 30 minutes after insufflation. The abdomen was then desufflated, with recording of data continuing at 35 and 40 minutes. Mean arterial pressure increased at 5 minutes during 20 mm of Hg insufflation pressure, and from 20 to 30 minutes during 30 mm of Hg pressure. Tidal volume decreased from 5 to 30 minutes during 10 and 20 mm of Hg pressures, and from 5 to 40 minutes during 30 mm of Hg pressure. Minute ventilation decreased at 10 and 20 minutes during 20 mm of Hg pressure. End-tidal CO2 concentration increased from 5 to 30 minutes during 20 and 30 mm of Hg pressure. The PaCO2 decreased at 40 minutes during 10 mm of Hg pressure, at 30 minutes during 20 mm of Hg pressure, and from 10 to 40 minutes during 30 mm of Hg pressure. Values for pH decreased from 10 to 30 minutes during 20 and 30 mm of Hg pressures. The PaO2 decreased from 20 to 40 minutes during 10 mm of Hg pressure, at 30 minutes during 20 mm of Hg pressure, and from 10 to 40 minutes during 30 mm of Hg pressure. Percentage decrease in tidal volume was greater at 5 and 15 minutes with 30 mm of Hg pressure. Differences in percentage increase in end tidal CO2 concentration were observed among the 3 pressures from 5 to 30 minutes. Although significant, these changes do not preclude use of laparoscopy if insufflation pressure > 20 mm of Hg is avoided.


Language: English

Descriptors: Cats; Preanesthetic medication; Esophageal sphincter
Effects of altered arterial carbon dioxide tension on quantitative electroencephalography in halothane-anesthetized dogs.

Smith, L.J.; Greene, S.A.; Moore, M.P.; Keegan, R.D.
Schaumburg, Ill. : American Veterinary Medical Association; 1994 Apr.

Includes references.

Language: English

Descriptors: Dogs; Electroencephalography; Carbon dioxide; Hypercapnia; Respiratory disorders; Heart rate; Blood pressure; Body temperature; Blood; Ph; Gases; Halothane

Abstract: Quantitative electroencephalography was assessed in 6 dogs anesthetized with 1.8% end-tidal halothane, under conditions of eucapnia, hypocapnia, and hypercapnia. Ventilation was controlled in each condition. Heart rate, arterial blood pressure, core body temperature, arterial pH, blood gas tensions, end-tidal CO2 tension, and end-tidal halothane concentration were monitored throughout the study. A 21-lead linked-ear montage was used for recording the EEG. Quantitative electroencephalographic data were stored on an optical disk for analysis at a later date. Values for absolute power of the EEG were determined for delta, theta, alpha, and beta frequencies. Hypocapnia was achieved by hyperventilation. Hypercapnia was achieved by titration of 5% CO2 to the inspired gas mixture. Hypercapnia was associated with an increase in the absolute power of the delta band. Hypocapnia caused an increase in the absolute power of delta, theta, and alpha frequencies. Quantitative electroencephalographic data appear to be altered by abnormalities in arterial carbon dioxide tension. Respiratory acidosis or alkalosis in halothane-anesthetized dogs may obscure or mimic electroencephalographic abnormalities caused by intracranial disease.
preceded by ventricular tachycardia occurred in the control dogs and three died within one minute of adrenaline administration. The predominant arrhythmias were ventricular premature beats, ventricular tachycardia, and second degree heart block. A significant increase (P < 0.05) in T wave amplitude was observed in the control group from 0.16 +/- 0.05 mV to 0.43 +/- 0.09 mV while only minimal increases were noted in the drug pretreated groups and there were no deaths. Data obtained from this study suggest that verapamil when administered early compares well with propranolol in the control of adrenaline-induced ventricular arrhythmias in the dog. Lignocaine when administered early prior to the induction of the arrhythmias protected against death but not arrhythmias. Drug pretreatments did not have any clinically significant effects on electrocardiographic parameters.

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Effects of atropine and glycopyrrolate on esophageal, gastric, and tracheal pH in anesthetized dogs.

Roush, J.K.; Keene, B.W.; Eicker, S.W.; Bjorling, D.E.

Hagerstown, Md.: J.B. Lippincott Company; 1990 Jan.


Language: English

Descriptors: Dogs; Preanesthetic medication; Atropine; Ph; Esophagus; Stomach; Trachea; Heart rate; Anesthesia; Respiration rate

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The effects of buprenorphine, nalbuphine and butorphanol alone or following halothane anaesthesia on food and water consumption and locomotor movement in rats.

Liles, J.H.; Flecknell, F.A.


Language: English

Descriptors: Rats; Anesthesia; Halothane; Analgesics; Locomotion; Food consumption; Water intake; Pain

Abstract: Locomotor activity and food and water consumption are potentially indices of post-operative pain in laboratory rodents, but it is important to establish whether these variables are directly affected by opioid analgesics or by halothane anaesthesia in normal rats. The effects of three opioids, buprenorphine, nalbuphine and butorphanol administered alone or following halothane anaesthesia, were studied in groups of normal non-operated adult Wistar rats. All 3 analgesics affected food intake and activity levels, but had little or no effect on water intake. Buprenorphine caused a significant elevation of activity levels and a reduction in food intake at clinical doses (0.01 and 0.05 mg/kg s/c. Nalbuphine (0.5, 1 and 2 mg/kg s/c) caused a reduction in food intake but had a smaller stimulatory effect on locomotion. Butorphanol (0.4 mg/kg s/c) caused a reduction in food intake and elevation in activity. These results suggest that water consumption is likely to be a more reliable variable to use when assessing post-operative pain and the efficacy of analgesics in rats.

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Effects of chloramphenicol, cimetidine and phenobarbital on and tolerance to xylazine-ketamine anesthesia in dogs.

Nossaman, B.C.; Amouzadeh, H.R.; Sangilah, S.

Manhattan, Kan.: American Academy of Veterinary and Comparative Toxicology; 1990 Jun.


Language: English

Descriptors: Dogs; Anesthesia; Xylazine; Ketamine; Chloramphenicol; Cimetidine; Phenobarbital; Tolerances

Language: English

Descriptors: Dogs; Preanaesthetic medication; Drug combinations; Dosage; Medetomidine; Pethidine; Subcutaneous injection; Intramuscular injection; Anesthesia; Narcotic antagonists; Heart rate


Language: English

Descriptors: Dogs; Ephedrine; Inhaled anesthetics; Dosage; Hemodynamics; Drug effects; Cardiovascular system; Oxygen; Hemoglobin

Abstract: The hemodynamic effects of 2 dosages of ephedrine were studied in 6 dogs anesthetized with isoflurane only (end-tidal concentration equivalent to 1.5 times minimum alveolar concentration). Following instrumentation, baseline (time 0) measurements included heart rate (HR), respiratory rate, mean arterial blood pressure (MAP), cardiac output, and blood gas tensions. Cardiac index (CI), stroke volume (SV), systemic vascular resistance (SVR), arterial oxygen content (CaO2), and oxygen delivery and consumption (DO2 and VO2, respectively) were calculated. Three dogs were given ephedrine IV at a dosage of 0.1 mg/kg of body weight, and 3 dogs were given ephedrine IV at a dosage of 0.25 mg/kg. Measurements were recorded at 5, 10, 15, 30, and 60 minutes. Each dog then received the alternate dosage of ephedrine, and measurements were again recorded at the same intervals. Effects of ephedrine varied with dosage. Neither dosage was associated with significant changes in pH, PaO2, PaCO2, VO2, or respiratory rate. Ephedrine at a dosage of 0.1 mg/kg caused transient significant increases in MAP, CI, SV, CaO2, and DO2, significant decreases in HR and SVR, and a late, slight decrease in CaO2. Ephedrine at a dosage of 0.25 mg/kg caused a greater and more prolonged increase in MAP, as well as increases in CI, SV, and SVR, and a decrease in HR. The higher dosage of ephedrine also caused a pronounced increase in hemoglobin concentration and CaO2, resulting in a 20 to 35% increase in DO2 throughout the 60-minute experiment.


Language: English

Descriptors: Dogs; Anesthetics; Pharmacokinetics


Language: English
Effects of hepatic P-450 enzyme inhibitors and inducers on the duration of xylazine + ketamine anesthesia in broiler chickens and mice. Roder, J.D.; Akkaya, R.; Amouzadeh, H.R.; Sangiah, S.; Burrows, G.; Qualls, C.W. Jr
Manhattan, Kan. : Kansas State University; 1993 Apr.

Language: English

Descriptors: Broilers; Xylazine; Anesthesia; Agonists; Ketamine; Enzyme activators; Liver; Microsomes; Enzyme inhibitors; Mice

Effects of mechanical and pharmacologic manipulations on portal pressure, central venous pressure, and heart rate in dogs.
Swalec, K.M.; Smeak, D.D.; Brown, J.

Language: English

Descriptors: Dogs; Internal pressure; Cardiovascular system; Heart rate; Surgery; Catheters; Portal vein; Blockage; Anesthesia; Bandages; Consciousness; Correlation; Propranolol

Abstract: Central venous pressure (CVP), portal pressure (PP), and heart rate (HR) were monitored in 6 female, sexually intact, middle-age Beagles during temporary portal vein obstruction, anesthetic recovery, abdominal bandaging, and propranolol administration. Intraoperative baseline PP was 7.3 mm of Hg (+/- 1.7 SD). Portal pressure was significantly increased throughout portal vein occlusion, but returned to baseline values 2 minutes after release of the ligature. Central venous pressure was significantly decreased throughout portal vein occlusion, but did not differ significantly from baseline values 3 minutes after release of the portal vein ligature. Portal pressure increased significantly (8 +/- 3.3 mm of Hg) over baseline values after application of an abdominal bandage; however, CVP did not change significantly. During postoperative monitoring, CVP and PP did not change significantly from respective 18-hour mean postoperative values in resting dogs. At 60 and 75 minutes after surgery, heart rate was significantly increased over the 18-hour mean. Portal pressure and CVP, respectively, were significantly increased over intraoperative baseline values in the first hour and the first 8 hours after surgery. Postoperative CVP and HR were significantly correlated. Individual measurements of PP in dogs that were abdominal pressing during barking or defecation were significantly increased (9 +/- 3 mm of Hg) above measurements taken after cessation of abdominal press. Portal pressure measurements in standing dogs decreased 7.5 +/- 2 mm of Hg, compared with measurements of the same dog in lateral recumbency. Central venous pressure was inaccurate in dogs performing abdominal press. Portal pressure did not decrease significantly from baseline after injection of propranolol (2 mg/kg, IV). Central venous pressure was significantly decreased at 2.5 and 3.0 hours after propranolol injection, and HR was significantly decreased from 1 to 3.5 hours after injection. Heart rate quickly
Abstract: Somatosensory, brainstem auditory evoked and peripheral sensory-motor responses were recorded in rats anaesthetized with either pentobarbital or a ketamine-xylazine combination. This was carried out in order to assess which of these agents degraded responses to a lesser extent and thus would be more suitable for monitoring experimental effects. Neither of the anaesthetic agents affected peripheral sensory or motor conduction, nor were there any interpeak latency changes of the early components of the brainstem auditory response. However, pentobarbital anaesthesia resulted in an increase in latency of the initial positive component of the somatosensory cortical evoked potential and attenuation of the following negative component. During the recovery stages of ketamine-xylazine anaesthesia the longer latency evoked potential components were observed to emerge.


Abstract: The prolonged and safe maintenance of general anesthesia in rabbits with commonly used injectable agents is difficult. Protracted, stable anesthesia with short recovery time has been described in humans using continuous intravenous infusion of ketamine with or without sedatives, muscle relaxants and paralytics. This study evaluated the anesthetic plane achieved and respiratory and cardiovascular effects produced with a ketamine-xylazine intravenous infusion in New Zealand White rabbits. Ten female rabbits were anesthetized with intramuscularly administered ketamine hydrochloride (35 mg/kg) and xylazine hydrochloride (5 mg/kg) after the preanesthetic, baseline measurements of arterial blood pO2, pCO2 and pH and heart and respiratory rates were recorded. The above parameters as well as mean arterial blood pressure, righting, palpebral, pedal, and jaw reflexes were monitored ten minutes after the intramuscularly administered induction dosage and throughout 4 hours of infusion. Results showed moderate hypotension (21.2% deviation from normal, p less than 0.008) and profound hypoxemia (45% deviation from baseline, p less than 0.001) 10 minutes after the intramuscularly administered induction dosage. Then, the 4 hour infusion of ketamine (1 mg/minute) and xylazine (0.1 mg/minute) was started. Hypotension progressed (49.1% deviation from normal, p less than 0.008), but hypoxemia and hypercarbemia gradually improved with no resultant change (p greater than 0.1) in respiratory rate but varying qualities of respiration were observed. Both mean arterial pO2 and pCO2 values returned to baseline within 20 minutes after completion of infusion. Heart rate and rectal temperature remained stable during the trial. The righting reflex was abolished in all rabbits throughout the study. The other reflexes that were lost initially slowly returned to most rabbits by the end of infusion. It was concluded that ketamine-xylazine co...

Effects of some hepatic microsomal enzyme inducers and inhibitors on xylazine-ketamine anesthesia.
Amouzadeh, H.R.; Sangiah, S.; Qualls, C.W. Jr

Effects of streptozotocin-induced diabetes on xylazine-ketamine anesthesia. Amouzadeh, H.R.; Sangiah, S.
Manhattan, Kan. : American Academy of Veterinary and Comparative Toxicology; 1990 Feb.

The effects of surgical procedures, halothane anaesthesia and nalbuphine on locomotor activity and food and water consumption in rats. Flecknell, P.A.; Liles, J.H.

The effects of surgical stimulus on the rat and the influence of analgesic treatment.
Liles, J.H.; Flecknell, P.A.
London : Bailliere Tindall; 1993 Nov.
Abstract: The effects of three graded mid-line abdominal operations were investigated in rats. All of the surgical procedures caused a significant reduction in food and water consumption, body weight and locomotor activity. Animals which had the skin incision alone showed significantly less depression of food and water consumption and body weight than groups which underwent laparotomy. The detrimental effects on water consumption and body weight could be significantly reduced by the administration of the opioid analgesic buprenorphine (TEMPGESIC, Reckitt & Colman) (0.05 mg kg\(^{-1}\), s.c.). The stepped response to graded surgery, and the reduction of the depressant effects of surgery on food and water consumption by buprenorphine, suggest that some of these changes may be related to the presence of pain after an operation.
Effects of urethane, alphaxolone/alphadolone, or halothane with or without neuromuscular blockade on survival during repeated episodes of global cerebral ischaemia in the rat.

Holder, D.S.

Language:  English
Descriptors: Rats; Urethane; Halothane; Anesthetics; Anesthesia; Blood pressure; Survival; Ischemia; Muscle relaxants; Lung ventilation

Abstract:  The effect of 4 anaesthetic regimes on blood pressure and survival was investigated during repeated episodes of cerebral ischaemia in the rat induced by diathermy of the vertebral arteries and reversible occlusion of the carotid arteries. The best results were obtained with inspired halothane with neuromuscular blockade and artificial ventilation, followed in order by halothane, intravenous alphaxolone/alphadolone, and intraperitoneal urethane with spontaneous ventilation.

The effects of various anesthetics on tissue levels of fructose-2,6-bisphosphate in rats.

Kasten, T.; Colliver, J.A.; Montrey, R.D.; Dunaway, G.A.

Language:  English
Descriptors: Rats; Anesthetics; Fructose-bisphosphatase; Kidneys; Brain; Heart; Muscles; Liver; Euthanasia

Abstract:  We report that the short-term use of various anesthetic agents prior to decapitation causes alteration of the levels of fructose-2,6-bisphosphate in kidney, brain, heart, muscle, and liver. These data indicate that even light anesthesia can not be used when levels of this metabolite are to be determined. Also, it appears that the use of any of these anesthetics can profoundly alter glucose utilization in many tissues.

Effects of yohimbine on bradycardia and duration of recumbency in ketamine/xylazine anesthetized ferrets.

Sylvina, T.J.; Berman, N.G.; Fox, J.G.

Language:  English
Descriptors: Ferrets; Ketamine; Xylazine; Yohimbine; Anesthesia; Heart rate; Duration; Intramuscular injection; Drug antagonism

Abstract:  Eleven adult ferrets (Mustela putorius furo) were anesthetized with ketamine hydrochloride (25 mg/kg, IM) and xylazine hydrochloride (2 mg/kg, IM). Fifteen minutes post-ketamine/xylazine injection, ferrets were treated with yohimbine hydrochloride at a dose of 0.5 mg/kg, or an equal volume of physiologic saline, intramuscularly. Each ferret served as its own control by randomly receiving both treatments with a minimum interval of 2 weeks between treatments on any one ferret. At 15 minutes post-ketamine/xylazine injection, mean heart rate measurements for both treatment groups were 27% less than the mean heart rate measurement reported for unanesthetized ferrets. Intramuscular administration of yohimbine antagonized the ketamine/xylazine induced bradycardia in 10 of the 11 ferrets, (p = 0.0001). In yohimbine treated ferrets, an increase in mean heart rate measurement was noted 5 minutes after the intramuscular
administration of yohimbine, and followed, over the next 15 minutes, by a progressive increase in mean heart rate. However, a corresponding decrease in mean heart rate measurement was observed in saline treated controls. Fifteen minutes after the injection of yohimbine, the mean heart rate measurement of yohimbine treated animals had increased to 194 beats per minute. This mean heart rate measurement is nearly 30% greater than the mean heart rate of 150 beats per minute measured at 15 minutes post-saline injection in saline treated controls. Also, yohimbine treatment significantly reduced duration of recumbency in 10 of 11 ferrets (p = 0.0001). Mean duration of recumbency for yohimbine treated ferrets was 41 +/- 9.7 minutes, whereas mean duration of recumbency for saline treated ferrets was determined to be 80 +/- 11.4 minutes. Intramuscular administration of yohimbine effectively reverses ketamine/xylazine induced bradycardia and significantly reduces duration of recumbency in ketamine/xylazine anesthetized ferrets.

Efficacy of the intranasal route for administration of anesthetic agents to adult rabbits.
Robertson, S.A.; Eberhart, S.
Language: English
Descriptors: Rabbits; Anesthesia; Application methods; Anesthetics; Ketamine; Xylazine; Dosage; Efficacy; Duration; Adverse effects; Drug combinations
Abstract: Anesthetic agents were administered to adult rabbits by using the intranasal route. Six sedative or anesthetic protocols were studied as follows: group 1 (n = 12), 2.0 mg midazolam/kg body weight (BW); group 2 (n = 8), 25 mg ketamine/kg BW; group 3 (n = 8), 10 mg of combination of tiletamine and zolazepam/kg BW; group 4 (n = 10), 3 mg xylazine/kg BW and 10 mg ketamine/kg BW; group 5 (n = 8), 1.0 mg midazolam/kg BW and 25 mg ketamine/kg BW; and group 6 (n = 6), 0.3 ml of a combination of fentanyl and droperidol/kg BW All drugs were diluted to a final volume of 0.4 ml/kg BW and an equal volume was administered with a catheter-tipped syringe into each nostril. Time to onset and duration of sedation or anesthesia were recorded. Muscle relaxation was graded as poor, fair, or excellent on the basis of flexibility of limbs. Presence or absence of a toe pinch response was recorded. Heart rate, respiratory rate, and hemoglobin saturation were measured before and at 5-min intervals after drug administration. The mean onset times for groups 1, 2, 3, 4, and 5 were 3.0, 1.2, 2.5, 2.0, and 0.8 min, respectively. The mean duration of action was 24.6, 36.7, 44.4, 35.2, and 52.5 min for midazolam, ketamine, tiletamine/zolazepam, xylazine/ketamine, and midazolam/ketamine, respectively. All protocols resulted in a significant decrease in respiratory rate. Hemoglobin saturation decreased in all groups except group 1. There was no significant change in heart rate after administration of midazolam, ketamine alone, or xylazine/ketamine. Heart rate increased significantly following tiletamine/zolazepam and midazolam/ketamine administration. Fentanyl/droperidol administration was associated with a rapid onset of severe bradycardia and apnea with a mortality rate of 50%. The intranasal route is a pain-free method of drug administration. Administration of midazolam alone provided good sedation and muscle relaxation. If analgesia is required, administration of xylazine plus ketamine is recommended. The intranasal administration of fentanyl/droperidol, at the dose studied, cannot be recommended.

Efficacy of tribromoethanol anesthesia in mice.
Papaiouannou, V.E.; Fox, J.G.
Abstract: We undertook a retrospective study to evaluate the efficacy, safety, and suitability of tribromoethanol (0.2 ml/10 g body weight of a 1.2% solution) as a surgical anesthetic in mice. We compiled records of embryo transfer during a 2.5-year period (1989-1991) and examined mice subjected to several other procedures requiring anesthesia. We documented a low rate of mortality and morbidity (<1%) and the absence of any significant abdominal adhesions or inflammatory response. The rapid induction and recovery, adequate surgical plane of anesthesia, and lack of complications make this anesthetic effective and simple to use. Precautions necessary to prevent decomposition of the anesthetic, storage in the dark at 4 degrees C, were minimal.
Abstract: A combination of equal parts by weight of tiletamine hydrochloride and zolazepam hydrochloride was evaluated clinically in 12 adult male ferrets. Two dosage levels of 12 mg/kg and 22 mg/kg were evaluated. Both doses produced excellent immobilization, the length of which was dose dependent. However, only the higher dose consistently produced good muscle relaxation. Excessive pain upon injection was not noted nor was residual lameness evident. Electrocardiographically, notching of the QRS complex was noted on both doses. Anesthesia with poor analgesia occurred at the lower dose, while ferrets receiving the higher dose showed more variability in the degree of analgesia. It was concluded that this combination administered intramuscularly provided excellent immobilization, variable muscle relaxation and a generally smooth induction and recovery. At the higher dose, analgesia was adequate for minor surgical procedures of short duration.

Evaluation of accuracy of pulse oximetry in dogs.


Language: English

Descriptors: Dogs; Blood; Hemoglobin; Oxygen; Estimation; Meters; Probes; Accuracy; Carbon dioxide

Abstract: The accuracy of a pulse oximeter was evaluated over a wide range of arterial oxygen and carbon dioxide tensions, using 2 probes (finger probe and ear probe) and 2 monitoring sites (tongue and tail) in anesthetized dogs. The arterial oxygen saturation of hemoglobin (SaO2) measured directly with a multiwavelength spectrophotometer was compared with saturation estimated by pulse oximetry (SpO2). Linear regression analysis of the pooled data from 399 simultaneous measurements of SpO2 and SaO2 indicated a highly significant correlation of SpO2 with SaO2 (r = 0.97; P less than or equal to 0.0001). Although the mean difference (+/- SD) between SpO2 and SaO2 for pooled data was small (-0.06 +/- 6.8%), SpO2 tended to underestimate high SaO2 values (greater than or equal to 70%) and to overestimate low SaO2 values (< 70%). When SaO2 values were greater than or equal to 70%, the ear probe applied to the tail was less accurate (produced a significantly greater SpO2-SaO2 difference) than the ear probe on the tongue, or the finger probe at either site. When SaO2 values were less than or equal to 50%, the finger probe applied at the tail was more accurate (produced significantly smaller SpO2-SaO2 differences) than the ear probe at either site. When SaO2 values were less than or equal to 70%, high arterial carbon dioxide tension (greater than or equal to 60 mm of Hg) was associated with greater overestimation of SaO2.
facilitation of endoscopic intubation of the duodenum in dogs.
Matz, M.E.; Leib, M.S.; Monroe, W.E.; Davenport, D.J.; Nelson, L.P.; Kenny, J.E.

Language: English
Descriptors: Dogs; Duodenum; Endoscopy; Atropine; Glucagon; Drugs; Intestinal motility

Abstract: Modification of gastroduodenal motility has been proposed to aid endoscopic examination of the duodenum in dogs. The objective of this study was to evaluate the use of the following pharmacologic agents for facilitation of endoscopic intubation of the duodenum in 6 clinically normal dogs: metoclopramide HCl (0.2 mg/kg of body weight), atropine sulfate (0.045 mg/kg), glucagon (0.06 mg/kg), and isotonic saline solution. In a randomized, blinded, crossover design, the ease of endoscopic duodenal intubation was qualitatively scored by 3 endoscopists (in random order), using the following scale: immediate entry; rapid entry-moderate manipulation; difficult entry-multiple attempts; and no entry after 2 minutes. Anesthesia was induced with thiopental and maintained with halothane. The 4 agents were diluted to a fixed volume and randomly administered. Duodenal intubation was attempted 2 minutes after IV injection of 1 of the agents. Four endoscopic procedures (1 for each agent) were performed on each dog with a minimum of 5 days between each procedure. In this study, no agent facilitated endoscopic duodenal intubation at the dose used. Instead, atropine and metoclopramide made duodenal intubation significantly more difficult, compared with use of saline solution. Difference between intubation after administration of glucagon and saline solution was not seen. On the basis of our findings, the use of these agents for facilitating endoscopic duodenal intubation is not recommended. In addition, in this study, we found that experience in endoscopic intubation is an important factor in determining the ease of duodenal intubation.
Evaluation of ketamine-xylazine in Syrian hamsters.
Includes references.

Evaluation of locomotor activity and food and water consumption as a method of assessing postoperative pain in rodents.
Flecknell, P.A.; Liles, J.H.

An evaluation of medetomidine/ketamine and other drug combinations for anaesthesia in cats.
Verstegen, J.; Pagetton, X.; Donnay, I.; Ectors, F.

Evaluation of periosteal nociception in the cat.
Mandsager, R.E.; Raffe, M.R.

Evaluation of telazol-xylazine as an anesthetic combination for use in Syrian hamsters.

Evaluation of the anti-inflammatory effects of a low dose of acetaminophen following surgery in dogs.
Mburu, D.N.
Language: English
Descriptors: Cats; Blood pressure; Ultrasonic devices; Ultrasound; Arteries

Abstract: The accuracy of the Doppler technique for indirect systolic blood pressure measurement was assessed in 16 anesthetized cats. Eight cats were anesthetized with isoflurane and 8 were anesthetized with halothane. Anesthetic depth and mode of ventilation were varied to obtain a wide range of arterial blood pressure. A Doppler transducer was placed on the palmer surface of the left fore-limb over the common digital branch of the radial artery to detect blood flow, and a blood pressure monitoring cuff with a width 37% the limb circumference was placed half way between the elbow and the carpus. To enable direct arterial pressure measurements, the left femoral artery was catheterized and the blood pressure waveforms recorded simultaneously. Systolic blood pressure measured by use of the Doppler ultrasonic technique was significantly lower than that obtained from the femoral artery catheter. Using linear regression, we determined a clinically useful calibration adjustment for Doppler indirect blood pressure measurement in cats: femoral systolic pressure = Doppler systolic pressure + 14 mm of Hg.
intravenous infusion should be considered as an option. Advantages include ease of administration, possibility of redosing as required, and minimal requirements for equipment. Disadvantages of intravenous anesthetic infusion in rabbits include potential for lethal overdose and metabolic alterations after administration.


Abstract: The intraperitoneal injection of anaesthetic agents is a simple and convenient method of anaesthetizing rats. However, all of the anaesthetic combinations in current use which are administered by intraperitoneal injection produce prolonged sedation, and full recovery of consciousness may take several hours. Fentanyl, a micro agonist opioid, and medetomidine, an alpha 2-adrenoceptor agonist were mixed and administered as a single intraperitoneal injection. Combinations of 300 microgram/300 microgram/kg and 300 microgram/200 microgram/kg of fentanyl/medetomidine were shown to produce surgical anaesthesia in the rat. This anaesthetic regimen produced significant respiratory depression (P < 0.01) and animals did not regain their righting reflex until 193 +/- 21 min (mean +/- 1 SD) after injection. Administration by intraperitoneal injection of atipamazole, a specific alpha 2-adrenoceptor antagonist (1 mg/kg) mixed with a micro antagonist/k agonist opioid (nalbuphine, 2 mg/kg or butorphanol 0.4 mg/kg), resulted in a rapid (< 8 min) reversal of anaesthesia and the associated respiratory depression, and apparent full recovery of consciousness.

Gas anesthesia setup for methoxyflurane use in small rodents.

Rich, S.; Grimm, C.; Wong, K.; Cesar, L.

Language: English

Glycemic control of pain threshold in diabetic and control rats. Lee, J.H.; McCarty, R.
Includes references.

Language: English

Guinea pigs biology and use in research. Tambrallo, L. J.; Fish, R. E.
University of Washington, Health Sciences Center for Educational Resources, American College of Laboratory Animal Medicine, National Agricultural Library (U.S.) Seattle, WA: Produced and distributed by the Health Sciences Center for Educational Resources, University of Washington; 1992.
67 slides: col. + 1 sound cassette (23 min.) + 1 guide.
(Laboratory animal medicine and science. Series 2; V-9023). Developed for the American College of Laboratory Animal Medicine. Sound accompaniment compatible for manual and automatic operation. Accompanying guide includes script. Portions of this project were funded by a grant from the National Agricultural Library. Covers sources and strains, normal behavior, unique anatomical and physiological features, reproduction, uses in research, and how to recognize and control pain.

Language: English

Hemodynamic and anesthetic effects of etomidate infusion in medetomidine-premedicated dogs.
Ko, J.C.H.; Thurmon, J.C.; Benson, G.J.; Tranquilli, W.J.; Olson, W.A.; Vaha-Vahe, A.T.

Language: English

Abstract: Hemodynamic and analgesic effects of medetomidine (15 microgram/kg of body weight, IM) and etomidate (0.5 mg/kg, IV, loading dose; 50 micrograms/kg/min, constant infusion) were evaluated in 6 healthy adult Beagles. Instrumentation was performed during isoflurane/oxygen-maintained anesthesia. Before initiation of the study, isoflurane was allowed to reach end-tidal concentration less than or equal to 0.5%, when baseline measurements were recorded. Medetomidine and atropine (0.044 mg/kg) were given IM after recording of baseline values. Ten minutes later, the loading dose of etomidate was given IM, and constant infusion was begun and continued for 60
minutes. Oxygen was administered via endotracheal tube throughout the study. Analgesia was evaluated by use of the standard tail clamp technique and a direct-current nerve stimulus. Sinoatrial and atrial-ventricular blocks occurred in 4 of 6 dogs within 2 minutes after administration of a medetomidine-atropine combination, but disappeared within 8 minutes. Apnea did not occur after administration of the etomidate loading dose. Analgesia was complete and consistent throughout 60 minutes of etomidate infusion. Medetomidine significantly (P < 0.05) increased systemic vascular resistance and decreased cardiac output. Etomidate infusion caused a decrease in respiratory function, but minimal changes in hemodynamic values. Time from termination of etomidate infusion to extubation, sternal recumbency, standing normally, and walking normally were 17.3 +/- 9.4, 43.8 +/- 14.2, 53.7 +/- 11.9, and 61.0 +/- 10.9 minutes, respectively. All recoveries were smooth and unremarkable. We concluded that this anesthetic drug combination, at the dosages used, is a safe technique in healthy Beagles.

### Hemodynamic effects of atropine and glycopyrrolate in isoflurane-xylazine-anesthetized dogs


Language: English

Descriptors: Dogs; Anesthesia; Drugs; Hemodynamics

### Hemodynamic effects of high-frequency oscillatory ventilation in halothane-anesthetized dogs


Language: English

Descriptors: Dogs; Male animals; Anesthesia; Halothane; Ventilation; Drug effects; Blood pressure; Heart output; Heart rate

Abstract: Hemodynamic effects of spontaneous ventilation, intermittent positive-pressure ventilation (IPPV), and high-frequency oscillatory ventilation (HFOV) were compared in 6 dogs during halothane anesthesia. Anesthesia was induced with IV thiamylal Na and was maintained with halothane (end-tidal concentration, 1.09%). During placement of catheters, dogs breathed spontaneously through a conventional semiclosed anesthetic circuit. Data were collected, and dogs were mechanically ventilated, using IPPV or HFOV in random order. Ventilation was adjusted to maintain PaCO2 between 38 and 43 mm of Hg during IPPV and HFOV. Cardiac index, aortic blood pressure, and maximum rate of increase of left ventricular pressure were significantly (P less than 0.05) less during HFOV than during spontaneous ventilation, whereas right atrial and pulmonary arterial pressure were significantly greater during HFOV than during spontaneous ventilation. During IPPV, only the maximum rate of increase of left ventricular pressure was significantly less than that during spontaneous ventilation.

### Hemodynamic effects of intravenous midazolam-xylazine-butorphanol in dogs


Language: English

Descriptors: Dogs; Benzodiazepines; Xylazine; Drug
High-frequency jet ventilation in anesthetized, paralyzed dogs and cats via transtracheal and endotracheal tube routes.

Haskins, S.C.; Orima, H.; Yamamoto, Y.; Patz, J.D.
Santa Barbara, Calif.: Veterinary Practice Pub; 1991 Jul.

Language: English
Descriptors: Dogs; Cats; Lung ventilation; Veterinary equipment

Hypotension produced by rapid intravenous administration of chloramphenicol in anaesthetised dogs.

Sangiah, S.; Burrows, G.E.

Language: English
Descriptors: Dogs; Chloramphenicol; Intravenous feeding; Anesthesia; Hypotension; Models; Infants; Calves

The immediate-shock deficit and postshock analgesia: implications for the relationship between the analgesic CR and UR.

Fanselow, M.S.; Landeira-Fernandez, J.; DeCola, J.P.; Kim, J.J.
Austin, Tex.: Psychonomic Society; 1994 Feb.

Language: English
Descriptors: Rats; Pain; Conditioned reflexes

Abstract: Rats received a 3-sec, 1-mA footshock either immediately or 3 min after placement in a chamber. Postshock pain sensitivity was assessed with the formalin test. The animals that received the 3-min delay between placement and shock showed an analgesic response compared with no-shock controls. The immediate-shock animals did not. Thus the immediate-shock deficit, previously reported for freezing and defecation, also occurs for analgesia. This suggests that shock levels sufficient to condition analgesia are not necessarily sufficient to produce analgesia as an unconditional response. As with freezing, there is a dissociation between conditional and unconditional responses in the fear-conditioning system. Increasing immediate-shock levels to 6 sec, 2 mA produced a transient unconditional analgesia. For analgesia, a conditional response is more readily produced than an unconditional response.

An improved method of endotracheal intubation in rabbits.

Bechtold, S.V.; Abrutyn, D.
Cordova, Tenn.: American Association for Laboratory Animal Science; 1991 Dec.

Language: English
Descriptors: Rabbits; Trachea; Tubes; Laboratory methods; Preanesthetic medication; Anesthesia

Induction techniques and maintenance systems for isoflurane in cats.

Sawyer, D.C.; Durham, R.A.; Striler, E.L.; Langham, M.
Anesthesia and analgesia in laboratory animals: proceedings -
Influence of anesthetic regimens on the perioperative catecholamine response associated with onychectomy in cats.
Lin, H.C.; Benson, G.J.; Thurmon, J.C.; Tranquilli, W.J.; Olson, W.A.; Bevill, R.P.
Language: English
Descriptors: Cats; Sedation; Tranquilizers; Opioids; Epinephrine; Norepinephrine

Abstract: Plasma catecholamine concentrations in response to onychectomy were examined in 27 cats receiving different anesthetic regimens. Each cat was anesthetized with a dissociative-tranquilizer combination, and onychectomy was performed on 1 forefoot. One week later, each cat was anesthetized with the same dissociative-tranquilizer combination plus either butorphanol or oxymorphone, and onychectomy was performed on the other forefoot. Four treatment groups were studied: tiletamine-zolazepam and tiletamine-zolazepam-butorphanol combinations were administered to group-1 cats, ketamine-acepromazine and ketamine-acepromazine-butorphanol combinations were administered to group-2 cats, tiletamine-zolazepam and tiletamine-zolazepam-oxymorphone combinations were administered to group-3 cats, and ketamine-acepromazine and ketamine-acepromazine-oxymorphone combinations were administered to group-4 cats. All drug combinations were administered IM. Central venous blood samples were drawn for catecholamine analysis after injection of drug(s), after onychectomy, and 1, 2, and 4 hours after injection. Tiletamine-zolazepam alone or tiletamine-zolazepam-butorphanol prevented epinephrine release for 2 hours after injection of drug(s). Norepinephrine concentration increased significantly (P < 0.05) from baseline after onychectomy for tiletamine-zolazepam-butorphanol and at 4 hours for tiletamine-zolazepam and tiletamine-zolazepam-butorphanol. After onychectomy, there was no difference in epinephrine values between tiletamine-zolazepam and tiletamine-zolazepam-oxymorphone. Ketamine-acepromazine prevented increases in norepinephrine and epinephrine concentrations for up to 2 hours after surgery. Addition of butorphanol to ketamine-acepromazine decreased norepinephrine values immediately after onychectomy. Addition of oxymorphone to ketamine-acepromazine resulted in lower epinephrine values 4 hours after surgery.

The influence of buprenorphine or bupivacaine on the post-operative effects of laparotomy and bile-duct ligation in rats.
Liles, J.H.; Flecknell, P.A.
Language: English
Descriptors: Rats; Analgesics; Postoperative care

Abstract: The post-operative effects of laparotomy and common bile-duct ligation were investigated in rats. Bile-duct ligation caused a significant reduction in food and water consumption, body weight and locomotor activity in the immediate post-operative period. Animals which underwent laparotomy in which bile-duct ligation was not carried out (sham operated groups) had significantly less depression of
food and water consumption and body weight than groups which underwent bile-duct ligation. The detrimental effects on food and water consumption and body weight could be significantly reduced by the administration of buprenorphine (0.05 mg/kg, s/c), but not by infiltration of the surgical wound with the long-acting local anaesthetic agent, bupivacaine. The reduction of these depressant effects of surgery on food and water consumption by the opioid analgesic buprenorphine suggests that some of these changes may be related to the presence of post-operative pain.
Abstract: Limonin 17-beta-D-glucopyranoside, nomilin 17-beta-D-glucopyranoside, and nomilinic acid 17-beta-D-glucopyranoside, three limonoid glucosides isolated from oranges, were tested for cancer chemopreventive activity. Eighty female Syrian hamsters were divided into four equal groups. The left buccal pouches of the animals in each group were pretreated topically with two applications of water (Group I) or a 3.5% solution of limonin 17-beta-D-glucopyranoside (Group II), nomilin 17-beta-D-glucopyranoside (Group III), or nomilinic acid 17-beta-D-glucopyranoside (Group IV). After this initial treatment, the left buccal pouches of 16 hamsters from each group were painted five times per week. Two or three times per week the pouches were treated with a 0.5% solution of the carcinogen 7,12-di-methylbenz[a]anthracene (DMBA) dissolved in mineral oil; on alternate days, the pouches were treated with water (Group I) or a 3.5% solution of limonin 17-beta-D-glucopyranoside (Group II), nomilin 17-beta-D-glucopyranoside, or nomilinic acid 17-beta-D-glucopyranoside. The 16 remaining animals were used as controls. These hamsters were treated five times per week, one day with mineral oil and the next with either water (Group I) or one of the 3.5% solutions of the limonoid glucosides (Groups II-IV). After 15 weeks (71 applications), the hamsters were killed. Multiple tumors were common in the animals treated with DMBA; however, the animals treated with limonin 17-beta-D-glucopyranoside exhibited a 55% decrease in average tumor burden. Further comparisons between Groups I and II showed that this reduction in tumor burden was mainly due to a decrease in tumor mass. The results for Groups III and IV showed that nomilin 17-beta-D-glucopyranoside and nomilinic acid 17-beta-D-glucopyranoside were ineffective as inhibitors of DMBA-induced buccal pouch neoplasia.

Descriptors: Rabbits; Anesthesia; Ketamine; Xylazine; Drug combinations; Neuroleptics; Opioids; Heart rate; Respiration rate; Blood pressure; Blood; Gases; Reflexes

Abstract: Ketamine is often used in combination with tranquilizers to produce surgical anesthesia in rabbits. While generally effective, there is considerable variation in the depth and duration of anesthesia achieved with Ketamine combinations. Butorphanol is a mixed agonist-antagonist opioid that is widely used in a variety of other species. In this study, the commonly used ketamine (35 mg/kg)/xylazine (5 mg/kg) combination is compared with ketamine (35 mg/kg)/xylazine (5 mg/kg)/butorphanol (0.1 mg/kg). Rabbits were anesthetized on consecutive weeks with one of the two regimens. Physiologic parameters including heart rate, respiratory rate, blood pressure and arterial blood gases (pH, PO2, PCO2) were measured throughout anesthesia. Loss of palpebral, pedal and righting reflexes were recorded and reflexes were subsequently evaluated. The addition of butorphanol prolonged reflex loss to 140% (X = 68 min +/- 20 SEM) of control for palpebral reflex; 506% (X = 92 min +/- 18 SEM) of control for pedal reflex; and 159% (X = 128 min +/- 21 SEM) of control for righting reflex. Addition of butorphanol to ketamine/ xylazine resulted in mild alterations in the physiologic changes traditionally associated with this combination. Butorphanol can be safely added to the Ketamine/xylazine combination in rabbits and results in moderate increases in the duration of reflex loss.


Descriptors: Dogs; Indometacin; Topical application; Body fluids; Eyes; Protein content; Pharmacokinetics

Abstract: The pharmacokinetic properties of indomethacin and its effects on aqueous protein values were studied in 15 clinically normal Beagles. The dogs were treated every 6 hours with 1% indomethacin suspension in 1 eye, with the other eye serving as a control. After 24 hours, the dogs were anesthetized and samples of aqueous humor (AH) were drawn by aqueocentesis at 0, 15, 30, 60, and 90 minutes after initial paracentesis. Additional samples were drawn at the time of euthanasia, 180 (6 dogs) and 360 minutes (9 dogs) minutes after initial paracentesis. Blood samples were obtained at each treatment and at each aqueocentesis. The eyes were enucleated after dogs were euthanized. Aqueous protein concentrations and indomethacin concentrations in AH, plasma, and different ocular tissues were determined. Topical indomethacin administration had no effect on baseline protein concentrations of AH. It reduced protein concentrations in AH significantly at all times after initial aqueocentesis. This reduction was approximately 30%. Indomethacin in the AH is mostly protein-bound. Concentrations were 350 ng/ml in primary
AH and 1,305 ng/ml in secondary AH, 90 minutes after initial aqueocentesis. Free-drug concentrations were relatively constant at about 220 ng/ml. Indomethacin administered topically is readily absorbed by the ocular adnexae, reaching a steady-state concentration of 25 ng/ml in blood plasma 18 hours after the start of treatment. Plasma concentrations were 50 times lower than therapeutically effective concentrations. High indomethacin concentrations were found in the cornea only. Low concentrations were found in the iris and ciliary body, the lens, and in the choroid. On the basis of our findings, we conclude that topically administered indomethacin is effective in reducing protein concentrations in secondary AH and is rapidly eliminated from the eye.

237 NAL Call. No.: DISS F1991212
Klinische Erprobung des neuen Sedativums und Analgetikums Medetomidin und seine Antagonisierung durch Atipamezol beim Hund [Clinical investigation of the new sedative and analgesic drug medetomidine and its antagonism by atipamezol in the dog].
Kramer, Sabine
Hannover : [s.n.]; 1991.
142, [192] p. : ill. ; 21 cm. Summary in English. Includes bibliographical references (p. 115-142).
Language: German

238 NAL Call. No.: 447.8 AM3
Lactic acidosis: effect of treatment on intracellular pH and energetics in living rat heart.
Zahler, R.; Barrett, E.; Majumdar, S.; Greene, R.; Gore, J.C.
Language: English
Descriptors: Lactic acidosis; Bicarbonates; Alkali treatment; Myocardium; Energy metabolism; Hemodynamics; Ph; Rats
Abstract: Systemic acidemia may impair cardiac contractility and predispose to arrhythmias. Moreover, bicarbonate treatment may further depress cardiac performance and increase mortality. Whether changes in myocardial intracellular pH or energy metabolism underlie this diminished performance has not been clarified in the in vivo setting. Thus we investigated the effect of lactic acidosis and two proposed treatments on myocardial energetics and intracellular pH in anesthetized living rats. A previously validated 31P-labeled nuclear magnetic resonance (31P-NMR) spectroscopic technique using saturating pulses was used to follow myocardial intracellular pH, phosphocreatine (PCr), ATP, and inorganic phosphate (Pi). After obtaining baseline values, we infused lactic acid to achieve a level > 5 mM. We then added an infusion of either bicarbonate (n = 7) or saline (n = 5). During lactic acid infusion (from 7.27 to 7.07, P < 0.0001), but myocardial intracellular pH did not change (7.13 vs. 7.07, P not significant). The ratio of PCr to Pi, however, decreased with acidemia (from 3.13 to 2.24, P = 0.004), suggesting impaired energy metabolism. Compared with saline, bicarbonate infusion restored systemic pH (from 7.08 to 7.29), but myocardial pH was unaltered. In addition, PCr/Pi declined further following bicarbonate treatment (1.41 vs. 2.42, P = 0.08) but not following saline. Thus, despite reversal of systemic acidemia, bicarbonate treatment was associated with more severe impairment of energy metabolism than saline. This suggests a mechanism for previously reported adverse cardiac effects of bicarbonate treatment.

239 NAL Call. No.: 410.9 P94
Long term anesthesia using a continuous infusion guaifenesin, ketamine, and xylazine in cats.
Brown, M.J.; McCarthy, T.J.; Bennett, B.T.
Language: English
Abstract: Cats (Felis catus) were anesthetized with a solution containing guaifenesin, ketamine and xylazine (GKX) in 0.9% saline. Anesthesia was induced by intravenous (IV) injection and was maintained for 6 hours by IV infusion. Heart rate, respiratory rate and PvO2 did not change significantly during the 6 hour monitoring period and remained consistently within the published normal ranges for cats. Although the PvCO2 did not change significantly, many values were abnormal. Venous pH decreased to slightly below normal values. Lead 11 ECG tracings showed no abnormalities. Loss of response to pedal pinch and jam, tone indicates maintenance of a surgical plane of anesthesia and adequate muscle relaxation throughout the 6 hour anesthetic period. Cats exhibited voluntary motor movement and were in sternal recumbency in just over 2 hours and were showing no residual clinical effects of the anesthesia 16 hours later. Although a transient mild acidosis was observed, we conclude that GKX provides a safe, effective and easily administered anesthetic regime for cats for periods up to 6 hours.

Long-term anaesthesia with alfentanil and midazolam for lung transplantation in the dog.

Language: English

Abstract: An anaesthetic regime was developed for lung transplantation in the dog using a continuous infusion of alfentanil and midazolam. This combination of agents provided excellent analgesia and also produced loss of consciousness. Cardiovascular stability was well maintained over a 24-h period of anaesthesia following lung transplantation. Although no animals were allowed to recover from anaesthesia in the present series, the regime described is likely to be suitable for recovery anaesthesia, particularly since both of the agents used can be reversed with specific antagonists.

A low cost tail-cuff method for the estimation of mean arterial pressure in conscious rats.

Language: English

Abstract: Methods utilized in the determination of systolic tail-cuff pressure (TCP) in awake rats are aimed at detecting the earliest possible tail pulsations as the cuff is deflated. In the method described in this study, a small, inexpensive electret microphone is used as a sensor, connected to the tail by a piece of rubber tubing. This design provides selective attenuation of tail pulsations appearing as the cuff is deflated between systolic and mean arterial pressures. In this manner, tail pulsations are detected only when the cuff pressure is lowered below the mean arterial pressure, thus providing an estimation of the latter. The method was validated in prewarmed awake normotensive and hypertensive rats by simultaneous comparison with directly measured systolic and mean pressures or with a conventional tail-cuff method. Validation studies were also carried out in anesthetized rats undergoing wide variations of arterial
pressure by parenteral injections of norepinephrine or nitroprusside. Close agreement was observed between TCP
determined with this method and directly obtained mean, but
not systolic, pressure. Thus, the method described in this
study constitutes an inexpensive alternative to conventional
tail-cuff methods. Mean, rather than systolic pressure,
appears to be evaluated in the conscious rat by employing this
method.

242 NAL Call. No.: 41.8 AM3
Malignant hyperthermia in dogs.
Nelson, T.E.
Journal of the American Veterinary Medical Association v. 198
Language: English
Descriptors: Dogs; Anesthesia; Adverse effects; Hyperthermia;
Susceptibility; Muscles; Halothane; Caffeine; Progeny; Calcium ions

243 NAL Call. No.: 41.8 AM3A
Measurements of left and right ventricular pressures and their
derivatives by transcutaneous puncture in rats.
Hamlin, R.L.
Schaumburg, Ill. : American Veterinary Medical Association;
Language: English
Descriptors: Rats; Ventricles; Blood pressure; Determination;
Recordings
Abstract: Eighteen rats were anesthetized with
xylazine/ketamine and placed in right lateral recumbency, and
a small incision was made in the skin of the left hemithorax.
A 21-gauge, 1-inch, short-beveled hypodermic needle, attached
directly to a pressure transducer filled with degassed saline
solution, was advanced through the incision into the left
ventricle and then advanced through the septum into the right
ventricle. High-fidelity tracings of right and left
ventricular pressures and their derivatives were obtained
through this approach in 13 rats. In 5 rats, measurements of
right ventricular pressures were obtained by additional right
ventricular puncture through the incision in the left
hemithorax. Right and left ventricular pressures were recorded
on single occasions in 18 rats, twice at 2-week intervals in 6
rats, and 3 times at 2-week intervals in 3 rats. Minimal
hemopericardium was observed, but most rats had evidence of
hemorrhage on the visceral pericardium. Left and right
ventricular pressures can be measured rapidly, safely, and
repeatedly in anesthetized rats by this method.

244 NAL Call. No.: 41.8 M69
Measuring how dogs respond to Telazol-xylazine combinations.
Sanders, E.; Short, C.E.; Keegan, R.; Tracy, C.H.
Lenexa, Kan. : Veterinary Medicine Publishing Company; 1989
Includes references.
Language: English
Descriptors: Dogs; Anesthesia; Anesthetics; Xylazine;
Neuroleptics; Drug combinations; Blood pressure; Heart rate;
Respiration; Duration

245 NAL Call. No.: RS164.P59
Mechanism of antiinflammatory and antithermal burn action of
CPase from Aloe arborescens Miller var. natalensis Berger in
Nagatsu, T.
Sussex : John Wiley & Sons; 1993.
Phytotherapy research : PTR v. 7: p. S30-S33; 1993. In the
special issue: Proceedings of the International Congress of
Phytotherapy. Meeting held on October 15-19, 1991, Seoul,
Korea. Includes references.

Language: English

Descriptors: Aloe arborescens; Carboxypeptidases; Medicinal properties; Pharmaceutical products; Inflammation; Burns; Edema; Wounds; Blood vessels; Abdomen; Rats; Mice

246 NAL Call. No.: 41.8 J8292 Medetomidine, a new sedative-analgesic for use in the dog and its reversal with atipamezole.
Clarke, K.W.; England, G.C.W.

Language: English

Descriptors: Dogs; Analgesics; Neuroleptics; Xylazine; Detoxicants; Adverse effects

247 NAL Call. No.: 41.8 J8292 Medetomidine as a premedicant in dogs and its reversal by atipamezole. Young, L.E.; Brearley, J.C.; Richards, D.L.S.; Bartram, D.H.; Jones, R.S.

Language: English

Descriptors: Dogs; Preanesthetic medication; Halothane; Nitrous oxide; Thiopental; Anesthesia; Narcotic antagonists; Recovery

248 NAL Call. No.: 41.8 V641 Medetomidine-butorphanol-midazolam for anaesthesia in dogs and its reversal by atipamezole.
Verstegen, J.; Petcho, A.
London: The Association; 1993 Apr03.

Language: English

Descriptors: Dogs; Anesthesia; Narcotic antagonists

249 NAL Call. No.: 41.8 AM3A Median effective dosage of propofol for induction of anesthesia in dogs. Watney, G.C.G.; Pablo, L.S.

Language: English

Descriptors: Dogs; Anesthetics; Dosage

Abstract: The median effective dosage (ED50) of propofol for induction of anesthesia was determined in 25 dogs premedicated with acepromazine, 0.05 mg/kg of body weight, and in 35 unpremedicated dogs. The ED50 was found to be 2.2 mg/kg in premedicated dogs and was 3.8 mg/kg in unpremedicated dogs. The mean +/- SD total dosage of propofol required to induce anesthesia in premedicated animals was 2.8 +/- 0.5 mg/kg and was 4.7 +/- 1.3 mg/kg in unpremedicated animals. Signs of excitement were observed in 5 of the unpremedicated dogs, but in none of those that were premedicated.

Moore, M.P.; Greene, S.A.; Keegan, R.D.
A method for controlled hindlimb hypothermia in small animals. 

Pynn, B.R.; Fish, J.S.; Plyley, M.J.; McKee, N.H. 


Abstract: A modified anaesthetic induction chamber for rats described in this paper has been designed for use in conjunction with a controlled delivery of halothane/O2 mixture and an anaesthetic scavenger system. Using this system rapid induction of anaesthesia is achieved using low levels of anaesthetic vapour without risk to the operator.

Monitoring of blood gas parameters and acid-base balance of pregnant and non-pregnant rabbits (Oryctolagus cuniculus) in routine experimental conditions.


Abstract: Blood gas parameters and acid-base balance values were determined in adult pregnant New Zealand rabbits (Oryctolagus cuniculus) in standard laboratory housing conditions and during anaesthesia with an association of ketamine-chlorpromazine, administered before surgical procedures. All the variables were also studied in adult non-pregnant female, used as controls. No differences in pH, sO2c, O2Hb, COHb, sO2m and a-vDO2 were found between pregnant and non-pregnant rabbits in physiological conditions and during anaesthesia. Ketamine-chlorpromazine and pregnancy seemed to change the other parameters used to assess the acid-base balance and the oxygenation conditions. Anaesthesia affected only Hb, O2Ct, O2Cap, C2O2 and P50. The additive effect of pregnancy and anaesthesia modified pCO2, PO2, HCO3-, TCO2, BEb, SBC, BEecf, A-aDO2, RI, MetHb, RHb, CaO2 and CvO2. The patterns described are close to those of other species, suggesting the New Zealand rabbit might be a reliable animal model for monitoring selected variables.


Nephrotoxicity of tiletamine in New Zealand white rabbits.

Doerning, B.J.; Brammer, D.W.; Chrisp, C.E.; Rush, H.G.


Language: English

Descriptors: Rabbits; Injectable anesthetics; Muscle relaxants; Kidneys; Drug toxicity; Dosage; Histopathology; Intramuscular injection

Abstract: Tiletamine and zolazepam, the two constituents of Telazol, were evaluated independently to determine which agent was responsible for the nephrotoxicity caused by Telazol in New Zealand White rabbits. Five rabbits were injected i.m. with 32 mg/kg of tiletamine, four animals received 7.5 mg/kg of tiletamine, and five rabbits received 32 mg/kg of zolazepam. Urinalysis was performed and blood urea nitrogen and serum creatinine were monitored for 7 days postinjection. In all five rabbits injected with the high dose of tiletamine, blood urea nitrogen and creatinine rose by 3 days postinjection and increased steadily throughout the week. By 4 days postinjection, urine protein and glucose were elevated and cellular and protein casts were present. No serum chemistry or urine abnormalities were detected in rabbits receiving low doses of tiletamine, zolazepam, or in the four control rabbits. All animals were euthanized and necropsied at 7 days postinjection. Histopathology showed severe renal tubular necrosis in all five rabbits injected with 32 mg/kg tiletamine. Mild nephrosis was present in three of four rabbits injected with 7.5 mg/kg of tiletamine. No lesions were present in the zolazepam-injected or control rabbits. The results of this study show that tiletamine is the constituent responsible for the nephrotoxicity of Telazol in rabbits. They further demonstrate that doses commonly used for anesthetic induction or restraint can produce renal lesions in rabbits.

Neurokinin and NMDA antagonists (but not a kainic acid antagonist) are antinociceptive in the mouse formalin model.

Murray, C.W.; Cowan, A.; Larson, A.A.


Language: English

Descriptors: Mice; Animal models; Antagonists; Pain; Substance p; Aspartic acid; Receptors; Opioids; Formaldehyde; Tests

Neuromuscular blocking activity of a glycosidic extract of the plant Sarcolobus globosus.

Mustafa, M.R.; Hadi, A.H.A.


Language: English

Descriptors: Asclepiadaceae; Plant composition; Seeds; Plant extracts; Glycosides; Nerve tissue; Muscle tissue; Neurophysiology; Paralysis; Rats; Chicks; Frogs

Abstract: Crude glycoside extracts from the plant. Sarcolobus globosus, were tested on the rat phrenic nerve diaphragm, chick biventer cervicis and frog rectus abdominis preparations. Nerve-stimulated twitches were inhibited by the extract. The muscle paralysis was not similar to that by curare-like blockers as it was not reversed by neostigmine or by a tetanus. Although contractures to acetylcholine or carbachol were not affected by 0.6 mg/ml of the extract, higher concentration of the extracts (3 mg/ml) depressed the log dose response curve of acetylcholine and carbachol. The
results suggest that the neuromuscular blocking effect of the extracts is either dose-dependent or due to a mixture of toxins with presynaptic or postsynaptic actions.

262 Neurotropic action of the hydroalcoholic extract of Melissa officinalis in the mouse.
Soulimani, R.; Fleurentin, J.; Mortier, F.; Misslin, R.; Derrieu, G.; Pelt, J.M.

Language: English
Descriptors: Melissa officinalis; Plant extracts; Essential oils; Analgesics; Mice

263 A new anesthetic agent for use in the gerbil.
Hrapkiewicz, K.L.; Stein, S.; Smiler, K.L.

Language: English
Descriptors: Gerbils; Anesthesia; Anesthetics

Abstract: Gerbils have been neglected in published reports on anesthesia. This study compared several dosages of Telazol used for anesthesia in the gerbil. Each group of animals injected with Telazol was evaluated for onset and duration of anesthesia and analgesia. Results showed Telazol to be a safe anesthetic and when dosed at 60 mg/kg to be suitable for major surgical procedures. Lower dosages of Telazol, in contrast, provided immobility and analgesia suitable for less noxious and noninvasive experimental manipulations. Dosages of Telazol required for surgical depth of analgesia and anesthesia were accompanied by a prolonged recovery time. Gerbils should be monitored closely to insure a safe recovery when using the higher dosages.

264 A new technique for surgery of the caudal vena cava in dogs using partial venous inflow occlusion.
Hunt, G.B.; Malik, R.; Bellenger, C.R.; Pearson, M.R.B.

Language: English
Descriptors: Dogs; Vena cava; Blockage; Venous circulation; Surgery; Hemodynamics; Metabolism; Duration; Safety

Abstract: The haemodynamic and metabolic effects of caudal vena cava occlusion were evaluated in six normal anaesthetised dogs. Each animal underwent a single eight minute episode of caudal vena cava occlusion. The procedure was well tolerated by all the dogs. Systolic arterial pressure was reduced by 62 +/- 5 per cent and the heart rate increased by 11 +/- 3 per cent. There was rapid haemodynamic recovery after the release of occlusion, all cardiovascular parameters returning to normal spontaneously within five minutes. Caudal vena cava occlusion is therefore safe for periods of up to eight minutes in normal dogs. This technique allows repair of caudal vena caval lesions without necessitating systemic heparinisation and the use of cavoatrial conduits.

265 Nonhuman primate analgesia.
Rosenberg, D.P.
Noradrenergic and opioid systems interact to alter the detection of noxious thermal stimuli and facial scratching in monkeys.


Pain and analgesia in dogs and cats.


Pain and anxiety behaviors of dogs during intravenous catheterization after premedication with placebo, acepromazine oxymorphone.


Pain control with medetomidine in dogs, cats, and laboratory animals. Vainio, O.


Pain. II. Control of pain in animals.


Pain: its perception and alleviation in dogs and cats. 1. The physiology of pain.

Sackman, J.E.
Anesthesia and Analgesia for Companion and Laboratory Animals, QB 95-12


Language: English

Descriptors: Dogs; Cats; Pain; Physiology; Peripheral nerves; Animal anatomy; Endorphins; Analgesics; Neurotransmitters

Parenteral anticholinergics in dogs with normal and elevated intraocular pressure.

Language: English

Descriptors: Dogs; Eyes; Glaucoma; Anesthesia

Pharmacokinetics of butorphanol tartrate in rabbits.
Portnoy, L.G.; Hustead, D.R.

Language: English

Descriptors: Rabbits; Analgesics; Pharmacokinetics; Half life; Intravenous injection; Subcutaneous injection

Abstract: The pharmacokinetic properties of butorphanol tartrate were determined in 7 rabbits after iv and sc injection (0.5 mg/kg of body weight). A 2-compartment model (biexponential) best represented the concentration vs time curve after IV injection. The half-life was calculated to be 1.64 hours via IV administration, whereas SC injection resulted in an elimination half-life of 3.16 hours.

Pharmacokinetics of etomidate in cats.
Wertz, E.M.; Benson, G.J.; Thurmon, J.C.; Tranquilli, W.J.; Davis, L.E.; Koritz, G.D.

Language: English

Descriptors: Cat; Anesthetics; Injections; Anesthesia; Pharmacokinetics

Abstract: Pharmacokinetic variables of etomidate were determined after IV administration of etomidate (3.0 mg/kg of body weight). Blood samples were collected for 6 hours. Disposition of this carboxylated imidazole best conformed to a 2- (n = 2) and a 3- compartment (n = 4) open pharmacokinetic model. The pharmacokinetic values were calculated for the overall best-fitted model, characterized as a mixed 2- and 3-compartmental model. The first and most rapid distribution half-life was 0.05 hour and a second distribution half-life was 0.35 hour. Elimination half-life was 2.89 hours, apparent volume of distribution was 11.87 +/- 4.64 L/kg, apparent volume of distribution at steady state was 4.64 +/- 2.25 L/kg, apparent volume of the central compartment was 1.17 +/- 0.70 L/kg, and total clearance was 2.47 +/- 0.78 L/kg/h.

Pharmacokinetics of intramuscularly administered pethidine in dogs and the influence of anaesthesia and surgery.
Waterman, A.E.; Kalthum, W.
The Veterinary record : journal of the British Veterinary

Pharmacokinetics of intramuscularly administered pethidine in dogs and the influence of anaesthesia and surgery.
Waterman, A.E.; Kalthum, W.
The Veterinary record : journal of the British Veterinary

Abstract: Pharmacokinetics and recovery characteristics of propofol in Greyhounds and mixed-breed dogs were compared. In all dogs, disposition of propofol was adequately described by a 2-compartment open model, with a rapid distribution phase followed by a slower elimination phase. When findings in Greyhounds were compared with those in mixed-breed dogs, significant differences were observed in mean concentrations of propofol in blood, recovery characteristics, and estimates for apparent volume of distribution, volume of distribution at steady state, and total body clearance. In addition, Greyhounds recovered from anesthesia at higher concentrations of propofol than did mixed-breed dogs. A secondary peak in blood propofol concentration was observed in 8 of 10 Greyhounds and in 5 of 8 mixed-breed dogs. This peak corresponded to the time of return of the righting reflex.


Language: English
Descriptors: Dogs; Serums; Analgesics; Determination; Gas chromatography; Mass spectrometry


Language: English
Descriptors: Ontario; Dogs; Thiopental; Nitrous oxide; Anesthesia; Barbiturates; Halogenated hydrocarbons


Language: English
Descriptors: Beagle; Dogs; Platelets; Aggregation; Atp; Anesthesia; Halothane; Luminescence; Luciferase

Abstract: Platelet aggregation and adenosine triphosphate (ATP) release were measured by use of the impedance method in blood samples obtained from 25 adult female Beagles before and after sedation with acepromazine (0.13 mg/kg of body weight) and atropine (0.05 mg/kg), and during general anesthesia. General anesthesia was induced by IV administration of thiamylal (average dosage, 2.1 mg/kg, range, 1.2 to 4.2 mg/kg) and was maintained with halothane in oxygen. Samples of jugular venous blood were obtained from each dog, using citrate as anticoagulant. Platelet count was done on each sample. Platelet aggregation and ATP released from the aggregating platelets were measured within 2.5 hours of sample collection, using a whole-blood aggregometer. Adenosine diphosphate (ADP) or collagen was used as aggregating agent. For each aggregating agent, platelet aggregation and ATP release were measured over 6 minutes. After sedation with acepromazine and atropine, significant (P < 0.01) reduction was observed in platelet count (from median values of 341,000 cells/microliter to 283,000 cells/microliter) and in the ability of platelets to aggregate in response to ADP (from 14.0 to 7.0 Ohms). During the same period, maximal release of ATP in response to collagen also was reduced (from 5.56 micromoles to 4.57 micromoles; P < 0.01); however, this difference ceased to be significant when ATP release was normalized for platelet count. During general anesthesia and surgery (200 minutes after sedation), platelet count and aggregation responses to ADP and collagen had returned to presedation values. None of the dogs in this study appeared to have hemostasis problems during surgery. In conclusion, sedation with acepromazine and atropine induces measurable inhibition of ADP-induced platelet aggregation that resolves during subsequent general anesthesia and surgery. Transient inhibition of platelet aggregation is not manifested by a change in gross hemostasis during surgery.
Possible participation of endogenous opioid peptides on the mechanism involved in analgesia induced by vouacapan.
Duarte, I.D.G.; Ferreira-Alves, D.L.; Nakamura-Craig, M.

Language: English

Abstract: The involvement of opioid peptides in the mechanism of action of vouacapan, a new experimental compound extracted from seeds of Pterodon poligalaeflorus Benth, was investigated both in mice utilizing acetic acid writhing response and in rats utilizing inflammatory hyperalgesia induced by carrageenan and modified Randall-Selitto method. Vouacapan, in both models, caused a dose-dependent analgesia when injected p.o., s.c. and i.p. The analgesic effect was partially blocked by naloxone, nalorphine and n-methyl-nalorphine. Significant tolerance to analgesic effect was observed following repeated administration of vouacapan or morphine. On the last day of treatment, cross administration revealed symmetrical and asymmetrical cross-tolerance between vouacapan and morphine, in rats and mice, respectively. We conclude that a release of endorphins could be involved in the analgesic mechanism of vouacapan in both models studied.
Lascelles, B.D.X.; Butterworth, S.J.; Waterman, A.E.
The Veterinary record : journal of the British Veterinary
references.

Language:  English
Descriptors: Dogs; Pethidine; Analgesics

287 NAL Call. No.: SF911.V43
Postoperative catecholamine response to onychectomy in
isoflurane-anesthetized cats: effect of analgesics.
Benson, G.J.; Wheaton, L.G.; Thurmon, J.C.; Tranquilli, W.J.;
Olson, W.A.; Davis, C.A.
Hagerstown, Md. : J.B. Lippincott Company; 1991 May.
Veterinary surgery v. 20 (3) : p. 222-225; 1991 May. Includes
references.

Language:  English
Descriptors: Cats; Anesthesia; Analgesics; Surgical
operations; Postoperative care; Catecholamines; Morphine;
Xylazine; Salicylates; Pain

288 NAL Call. No.: SF601.V523
Postoperative epidural analgesia.
McMurphy, R.M.
The Veterinary clinics of North America : Small animal
practice v. 23 (4) : p. 703-716; 1993 Jul. In the series
analytic: Stifle surgery / edited by James K. Roush. Includes
references.

Language:  English
Descriptors: Dogs; Cats; Conduction anesthesia

289 NAL Call. No.: 41.8 AM3A
Potency of rapidly acting barbiturates in dogs, using
inhibition of the laryngeal reflex as the end point.
Turner, D.M.; Ilkiw, J.E.
Schaumburg, Ill. : American Veterinary Medical Association;
1990 Apr. American journal of veterinary research v. 51 (4):
p. 595-597; 1990 Apr. Includes references.

Language:  English
Descriptors: Dogs; Barbiturates; Thiopental; Larynx; Reflexes;
Anesthesia; Dosage effect

Abstract: Thiopental, thiamylal, and methohexital were
administered to 30 dogs to determine equipotent doses
necessary to inhibit laryngeal reflexes. The doses studied
were 7.1, 10.0, 14.1, 20.0, and 28.3 mg of thiopental/kg of
body weight; 5.7, 8.0, 11.3, 16.0, and 22.6 mg of
thiamylal/kg; and 3.5, 5.0, 7.1, 10.0, and 14.1 mg of
methohexital/kg. At 1, 2.5, 5, and 10 minutes after injection,
the presence or absence of the laryngoscopic reflex, pedal
reflex, and jaw tone were recorded. The times for return of
each reflex, as well as the ability to walk 10 steps without
assistance, were also recorded. Using the method of least
squares, a probit analysis was performed on the quantal
responses at 1 minute. The effective dose in 50% of the
population for the laryngoscopic reflex was chosen as the end
point for intubation, and the computed doses necessary to
achieve this end point were 19.4 mg of thiopental/kg, 18.4 mg
of thiamylal/kg, and 9.7 mg of methohexital/kg. When potencies
of the drugs were compared with that of thiopental (1),
thiamylal was found to be equipotent (1.06) and methohexital
twice as potent (2.0). At the accepted clinical dose, recovery
times for thiopental (71.1 +/- 7.2 minutes) and thiamylal
(75.3 +/- 7.7 minutes) were similar, and twice that for
methohexital (33.9 +/- 4.6 minutes).

290 NAL Call. No.: Z7994.L3A5
Precision-cut guinea-pig liver slices as a tool for studying
the toxicity of volatile anaesthetics.

Ghantous, H.N.; Fernando, J.; Morgan, S.E.; Gandolfi, A.J.; Brandel, K. Nottingham: Fund for the Replacement of Animals in Medical Experiments; 1990 Nov.

Alternatives to laboratory animals: ATLA v. 18: p. 191-199; 1990 Nov. Includes references.

Language: English

Descriptors: Animal testing alternatives; Liver; Anesthetics

Abstract: Cultured precision-cut liver slices retain normal liver architecture and physiological biochemical functions. Hartley male guinea-pig liver slices have proven to be a good model for studying the biotransformation and toxicity of halothane. This system was used to evaluate the biotransformation and toxicity of different volatile anaesthetics (halothane, enflurane, isoflurane and sevoflurane), and compare their effects to those of new anaesthetics (desflurane). Liver slices (250-300 micrometers thick) were incubated in sealed roller vials, containing Krebs Henseleit buffer at 37 degrees C under 95% O2:5% CO2 atmosphere. Volatile anaesthetics were delivered by volatilisation after pre-incubation for 1 hour to produce a constant concentration in the medium. Production of the metabolites, trifluoroacetic acid and fluoride ion, was measured. Intracellular potassium ion content, protein synthesis and secretion were determined as indicators of viability of the slices. The rank order of biotransformation of anaesthetics by the liver slices was halothane > sevoflurane > isoflurane and enflurane > desflurane. The rank order of hepatotoxicity of these anaesthetics was halothane > isoflurane and enflurane > sevoflurane and desflurane. Halothane is the anaesthetic which is metabolised furthest and has the most toxic effect, while desflurane is the least metabolised anaesthetic and has the least toxicity. This in vitro cultured precision-cut liver slice system appears to be suitable for studying the biotransformation of volatile anaesthetics and correlating its role in the resulting toxicity.


Language: English

Descriptors: Celastrus paniculatus; Flowers; Tecomella undulata; Plant extracts; Medicinal plants; Analgesics; Antiinflammatory agents

Abstract: Flowers of Celastrus paniculatus and whole plant of Tecomella undulata were extracted individually in absolute methanol. Using the hot water tail immersion test in mice and carrageenan induced pedal edema in rats, both extracts were tested for their oral analgesic and anti-inflammatory potentials. Results showed that C. paniculatus had both analgesic and anti-inflammatory activities, while T. undulata had only analgesic potential when compared with aspirin.


Language: English

Descriptors: Calotropis procera; Roots; Plant extracts; Medicinal plants; Analgesics; Antiinflammatory agents; Edema; Mice; Rats

Abstract: A chloroform-soluble fraction from Calotropis
procera roots showed significant dose-related antiinflammatory activity in rats using the pharmacologic models of carrageenin-induced pedal oedema, cotton pellet granuloma and formaldehyde-induced arthritis. In addition, significant analgesic potential was demonstrated using acetic acid-induced writhing in mice.

293 NAL Call. No.: RS164.P59

Language: English
Descriptors: Canary Islands; Labiatae; Plant extracts; Medicinal plants; Antiinflammatory agents; Analgesics; Antipyretics; Drug toxicity; Folk medicine; Rats; Mice

294 NAL Call. No.: 41.8 AM3

Language: English
Descriptors: Dogs; Cats; Analgesics; Pain; Prescriptions; Frequency; Postoperative care

295 NAL Call. No.: SF914.A53 1990

Language: English
Descriptors: Primates; Anesthesia

296 NAL Call. No.: SF601.P76

Language: English
Descriptors: Dogs; Cats; Surgical operations; Neoplasms; Preoperative care; Postoperative complications; Endocrine diseases; Metastasis; Pancreas; Adrenal glands; Animal anatomy; Parathyroid; Thyroid gland; Anesthesia; Preanesthetic medication; Pituitary; Literature reviews

297 NAL Call. No.: 410.9 P94

Language: English
Descriptors: Rabbits; Pituitary; Adenoma; Dysplasia; Mammary glands; Prolactin; Histopathology; Case reports

Abstract: Nine aged (mean age = 3.2 years) nulliparous New Zealand white rabbit does were found to have markedly enlarged teats. The teats were frequently engorged with fluid but were not hot and did not cause signs of pain. The number of affected teats per animal ranged from 1 to 8 (mean = 4). The teats and associated glandular tissue were typically discolored grey, blue, or greenish black (n = 6). Prolactin concentrations were evaluated by radioimmunoassay. Serum prolactin concentrations ranged from 22.4 ng/ml to 2.21 p micrograms/ml (mean = 397.3 ng/ml), which was 10- to 1000-fold greater than normal values in nonpregnant rabbits. Conventional radiography of the skull of six rabbits did not reveal pituitary enlargement. Necropsy revealed an enlarged pituitary gland and sella turcica in six of nine does. The diaphragma sellae had ruptured in two rabbits. All nine rabbits had pituitary acidophil adenomas. The neoplastic portions of the pituitaries were diffusely immunoreactive when stained immunohistochemically for prolactin. In contrast, only small clusters of five to seven cells stained positively in normal pituitaries selected as controls. Histologic examination of the mammary glands revealed numerous large, dilated cystic spaces containing proteinaceous fluid. Many cysts had numerous papillary epithelial infoldings. The cystic dilations extended into and included the teat canal producing the gross appearance. Prolactin-secreting acidophil adenomas have not been previously reported in the rabbit, and the association with mammary dysplasia is unique.
Quantitative electroencephalography was assessed in dogs under controlled, 2% end-tidal isoflurane anesthetic conditions, and each variable at each electrode site was tested for normal distribution. With the quantitative electroencephalographic system used, 16 values for each of 21 electrode sites were evaluated. Absolute power ratios also were evaluated. The methods for quantitative electroencephalographic recording and analysis appear to be readily adaptable to the dog. Most of the data do not conform to a normal distribution. Therefore, distribution-free nonparametric statistics should be used when looking for differences under experimental or clinical conditions.

Quantitative electroencephalography appears to be a sensitive noninvasive method that could be used to evaluate brain function under anesthetic, clinical, and experimental settings.

Rabbits introduction to use in research

Presents laws and guidelines, historical use in research and testing, development of alternatives, attributes as research animals, recognition of pain and disease, and signs and significance of common diseases.
(P < 0.003) reduced isoflurane MAC by 47.2%. Atipamezole (0.3 mg/kg, IV), an alpha 2-adrenergic antagonist, completely reversed the effect of medetomidine on isoflurane MAC. Atipamezole alone did not significantly alter isoflurane MAC. After medetomidine administration, marked bradycardia developed in all dogs and persisted for more than 2 hours. Mean arterial blood pressure increased acutely, but later decreased and hypotension persisted for more than 2 hours. Atipamezole reversed the bradycardic and hypotensive effects of medetomidine. Results of this study indicate that medetomidine may be useful in clinical cases in which isoflurane MAC-reduction is desirable and that atipamezole might be used to reverse desirable and undesirable effects of medetomidine during isoflurane anesthesia.


Descriptors: Dogs; Xylazine; Atropine; Ketamine; Pentobarbital; Drug combinations; Drug effects; Brain; Electric potential
Abstract:  Brain stem auditory-evoked potentials (BAEP) were recorded in 4 dogs to analyze the relationship between acoustic stimulus intensities and peak latencies of each wave, and to investigate the relative effects of xylazine-atropine-ketamine, and xylazine-atropine-pentobarbital combinations and the time-course effects of the latter 2 drug combinations on BAEP. Click stimulations fixed at a stimulus rate of 10/s and a frequency of 4 kHz were delivered at intensities ranging from 10- to 110-dB sound pressure level (SPL) in 10-dB steps for analyzing the relationship between the acoustic stimulus intensities and the peak latencies and at an intensity of 110-dB SPL for investigating the effects of the sedative and the anaesthetic drug combinations and their time-course effects on BAEP. Waves I and VI were identified with stimulus intensity of greater than or equal to 50-dB SPL. Wave VII was observed in some records, but was excluded from statistical analysis. As intensity was increased from 50- to 110-dB SPL, the latency decreased for all waves during xylazine-atropine-ketamine anesthesia. There were no statistically significant differences in the peak latencies of each wave in BAEP among xylazine-atropine, xylazine-atropine-ketamine, and xylazine-atropine-pentobarbital combinations 20 minutes after drug administration, except that the latency of wave VI during xylazine-atropine sedation was significantly (P < 0.01) shorter than that detected during xylazine-atropine-ketamine or xylazine-atropine-pentobarbital anesthesia. There were no significant changes in peak latencies of waves I, II, III, V, and VI for 90 minutes after administration of the xylazine-atropine-ketamine combination and for 120 minutes after administration of the xylazine-atropine-pentobarbital combination. It was concluded that BAEP did not change over time after xylazine-atropine-ketamine or xylazine-atropine-pentobarbital administration.
Responses of laboratory animals to some injectable anaesthetics. Smith, W.

Language: English

Descriptors: Laboratory animals; Injectable anesthetics

Abstract: Xylazine, ketamine, methohexitone and alphadalone/alphaxalone, were administered intraperitoneally, intramuscularly or intravenously to mice, rats, guineapigs and rabbits. Times for disappearance and reappearance of reflexes were recorded, and duration of loss of reflex. Delivering a predetermined dose gave a varying individual response, ranging from inadequate anaesthesia to death. Using reflexes to assess depth of anaesthesia was of limited value. Reflex movements to noxious stimuli generally persisted even at dose rates that caused prolonged recovery times and death. Conversely, in rats there was no response to a cutaneous stimulus in some animals even though recumbency was almost restored.

308 NAL Call. No.: 41.8 R312
Reversal of atracurium neuromuscular block with neostigmine in the dog. Jones, R.S.

Language: English

Descriptors: Dogs; Neostigmine; Drug antagonism; Anesthesia; Muscle relaxants; Time; Dosage effect

309 NAL Call. No.: QL55.A1L3
Reversal of fentanyl/fluanisone neuroleptanalgesia in the rabbit using mixed agonist/antagonist opioids.
Flecknell, P.A.; Liles, J.H.; Wootton, R.
London: Royal Society of Medicine Services; 1989 Apr.
Laboratory animals v. 23 (2): p. 147-155; 1989 Apr. Includes references.

Language: English

Descriptors: Rabbits; Anesthesia; Fentanyl; Neuroleptics; Opium; Drug antagonism; Drug synergy

Abstract: The reversal of the neuroleptanalgesic combination of fentanyl/fluanisone using mixed agonist/antagonist opioids has been investigated in the rabbit. All of the compounds studied (naloxone, nalbuphine, meptazinol, butorphanol, buprenorphine, pentazocine, doxapram) reversed the respiratory depression and sedation produced by fentanyl/fluanisone. Fentanyl/fluanisone produced profound analgesia for 180 min, which was rapidly and completely antagonized by naloxone. The mixed agonist/antagonist opioids produced a reduction in the degree of analgesia but, in contrast to naloxone, analgesic activity persisted from 120 min (meptazinol) to 420 min (buprenorphine). Administration of buprenorphine to rabbits anaesthetized with fentanyl/fluanisone and midazolam confirmed that the reversal of respiratory depression was accompanied by the return of arterial pH, PCO2 and PCE2 to preanaesthetic values. The use of neuroleptanalgesic anaesthetic regimens, which have been shown to provide effective surgical anaesthesia, combined with reversal using a mixed agonist/antagonist opioid to provide postoperative analgesia, appears to be a valuable refinement of current laboratory animal anaesthetic practice.

310 NAL Call. No.: SF915.J63
Reversal of medetomidine sedation by atipamezole in dogs.
Vainio, O.; Vaha-Vahe, T.

Language: English
Descriptors: Dogs; Anesthetics; Anesthesia; Drug antagonism; Narcotic antagonists; Adverse effects

311 NAL Call. No.: SF910.P34A55 1992
Review of pharmacology of medetomidine and detomidine: two chemically similar alpha-2-adrenoreceptor agonists used as veterinary sedatives. MacDonald, E.; Virtanen, Raimo

Language: English
Descriptors: Laboratory animals; Rats; Agonists; Pharmacology; Pharmacokinetics; Veterinary medicine; Analgesics; Central nervous system; Drug effects; Xylazine; Endocrine system; Cardiovascular system; Alpha-adrenergic receptors

312 NAL Call. No.: RS160.J6
Screening in mice of some medicinal plants used for analgesic purposes in the state of Sao Paulo. II. Costa, M.; Di Stasi, L.C.; Kirizawa, M.; Mendacolli, S.L.J.; Gomes, C.; Trolin, G.

Language: English
Descriptors: Brazil; Medicinal plants; Screening tests; Analgesics; Lippia; Piper; Tillandsia usneoides; Mice

313 NAL Call. No.: SF915.J63
Sedative and analgesic effects of medetomidine in dogs. Vainio, O.; Vaha-Vahe, T.; Palmu, L.

Language: English
Descriptors: Dogs; Analgesics; Anesthesia; Drug effects

314 NAL Call. No.: 410.9 P94
Sedative efficacy of droperidol and diazepam in the rat. Quinn, R.H.; Danneman, P.J.; Dysko, R.C.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1994 Apr.

Language: English
Descriptors: Rats; Anesthesia; Droperidol; Diazepam; Dosage; Efficacy; Animal welfare; Restraint of animals; Laboratory methods; Diagnostic techniques; Pain

Abstract: Droperidol and diazepam were evaluated for sedative properties in 12 male Sprague Dawley rats (Rattus norvegicus). Over a period of several weeks, each rat was treated subcutaneously with 0.5 mg droperidol/kg, 2.0 mg droperidol/kg, 5.0 mg diazepam/kg, 15.0 mg diazepam/kg, and physiologic saline according to a randomized schedule. After each treatment, the animals were evaluated for their response to a series of four common clinical manipulations (tail-vein bleeding, orbital bleeding, teeth clipping, and toenail bleeding) at five time points following the injection. Rats were scored on the basis of their responses to each manipulation. Response to cardiac puncture was assessed once in each animal immediately prior to euthanasia. Histologic lesions associated with subcutaneous and intramuscular administration of these drugs were evaluated in a separate group of animals. Results indicate that both droperidol and diazepam (at either dose) allow easier manipulation for toenail bleeding and teeth clipping when compared with saline control. There was no advantage in using these sedatives for tailvein bleeding. Orbital bleeding could
not be performed humanely with either drug. Diazepam at a dose of 15.0 mg/kg allowed humane cardiac puncture. Subcutaneous injection of diazepam or 2.0 mg droperidol/kg resulted in various degrees of inflammation revealed by histologic examination, although no clinical signs were associated with these lesions. Subcutaneous administration of droperidol at a dose of 0.5 mg/kg is recommended for nonpainful, noninvasive manipulations as it provides adequate sedation for most procedures without inducing the subcutaneous inflammation observed with diazepam or 2.0 mg droperidol/kg. Diazepam at a dose of 15.0 mg/kg appears to be a humane alternative to general anesthesia for cardiac puncture.

315 NAL Call. No.: RS164.P59
Sedative hypnotic action of Pala Papua, Myristica argentea, in mice. Takahashi, S.; Uekane, A.; Otuka, K.; Shigenobu, K.
Sussex : John Wiley & Sons; 1991 Apr.
Includes references.
Language: English
Descriptors: Myristica argentea; Myristica fragrans; Seeds; Essential oils; Plant extracts; Traditional medicines; Pharmacology; Mice

316 NAL Call. No.: 41.8 M69
Selecting the right analgesics: indications and dosage requirements. Tranquilli, W.J.; Flkes, L.L.; Raff, M.R.
Includes references.
Language: English
Descriptors: Dogs; Cat; Analgesics; Dosage effect; Anesthetics; Pain

317 NAL Call. No.: 41.8 AM3
Side effects of etomidate in dogs.
Muir, W.W. III; Mason, D.E.
Language: English
Descriptors: Dogs; Anesthetics; Anesthesia; Adverse effects; Diazepam; Morphine; Drugs

318 NAL Call. No.: QL55.A1L3
A simple laryngoscopic technique for the endotracheal intubation of rabbits. Macrae, D.J.; Guerreiro, D.
Includes references.
Language: English
Descriptors: Rabbits; Anesthesia; Larynx; Trachea; Endoscopy
Abstract: A safe and reliable technique for the endotracheal intubation of rabbits is described. Direct laryngoscopy is followed by intubation of the trachea with a fine catheter, and subsequent advancement of the endotracheal tube over this catheter.

319 NAL Call. No.: SF991.M22 1994
Small animal anesthesia canine and feline practice.
McKelvey, Diane; Hollingshead, K. Wayne
St. Louis : Mosby; 1994.
xxviii, 332 p. : ill. ; 24 cm. (Mosby's fundamentals of veterinary technology). Includes bibliographical references and index.
Language: English

Language: English

Abstract: 1. Bolus i.v. doses of 14C-propofol (7-10 mg/kg) to rat, dog and rabbit, an infusion dose (0.47 mg/kg per min for 6 h) to dog were eliminated primarily in urine (60-95% dose); faecal elimination (13-31%) occurred for rat and dog, but was minimal (< 2%) for rabbit. 2. After bolus administration, blood 14C concentrations were maximal (8-30 micrograms equiv./ml) at 2-15 min; these declined rapidly during the 0-2 h period and thereafter more slowly. Propofol concentrations were maximal (4-16 micrograms/ml) at 2 min and the profiles were best fitted by a tri-exponential (rat and dog) or bi-exponential (rabbit) equation. Duration of sleep ranged from 5 to 8 min. 3. Infusion of 14C-propofol in dog gave a blood 14C concentration of 117 micrograms equiv./ml at the end of the 6 h infusion period; this declined at a similar rate to the bolus dose. Propofol concentration on termination of infusion was 13 micrograms/ml; thereafter, propofol concentrations declined less rapidly than after the bolus dose. Waking occurred about 44 min post-infusion. 4. Propofol was cleared by conjugation of the parent molecule or its quinol metabolite; hydroxylation of an isopropyl group also occurred in rat and rabbit. Biliary excretion leading to enterohepatic recirculation, and in turn increased sulphate conjugation, occurred in rat and dog, but not rabbit, resulting in a marked interspecies variation in drug clearance and metabolite profiles.


Language: English

Abstract: Thoracic compliance measurements by use of readily available equipment were determined to be practical and safe in dogs. Twenty healthy dogs (age 1 to 16 years, weight 2.3 to 49.5 kg) were anesthetized for routine procedures such as dentistry or neutering. The animals were first hyperventilated to reduce pulmonary atelectasis, to check for leakage at the endotracheal tube cuff, and to induce mild hypocarbia, thus minimizing voluntary respiratory efforts. Total thoracic compliance measurements were calculated as the difference between exhaled volumes at static inspiratory pressures of 15 and 20 cm of H2O, divided by the pressure difference, and expressed as a function of body weight. The procedure was easy, took 5 to 10 minutes, and caused no recognizable ill effects in any of the dogs studied. Mean total thoracic compliance was 42.25 +/- 32 ml/cm of H2O. There was a significant correlation with weight, but no significant relationship was seen between compliance and age, or gender. The mean weight-adjusted total thoracic compliance was 1.85 +/- 0.56 ml/cm of H2O/kg. In studies in a small group of dogs with documented respiratory tract disease, 4 of 7 had a mean compliance > 2 SD below the normal range. Thus, this test may become part of the routine workup of any animal being anesthetized for procedures such as bronchoscopy to evaluate respiratory tract disease. Routine monitoring of animals on...
ventilators could provide early warning of complications such as pneumonia, pleural effusion, or pulmonary edema.

322
NAL Call. No.: SF910.P34A55 1992
Studies on the role of adrenergic receptors in a model of tonic pain. Tasker, R.A.R.
Language: English
Descriptors: Laboratory animals; Rats; Pain; Alpha-adrenergic receptors; Drugs; Testing; Drug effects; Analgesics; Yohimbine; Dosage; Methoxamine

323
NAL Call. No.: 41.8 AM3
Schaumburg, Ill. : The Association; 1993 Feb01.
Language: English
Descriptors: Dogs; Surgery; Ischemia; Disease prevention; Hypothermia; Cooling; Adverse effects; Case reports

324
NAL Call. No.: aHV4701.A952
Surgery in rodents: risk of potential hypo- and hyperthermia. Romanovsky, A.A.
Language: English
Descriptors: Rodents; Surgery; Risk; Hyperthermia; Hypothermia; Anesthesia; Complications

325
NAL Call. No.: SP601.C66
Surgical and anesthetic management of puppies and kittens. Hosgood, G.
Language: English
Descriptors: Puppies; Kittens; Preoperative care; Surgery; Respiratory system; Cardiovascular system; Liver; Kidneys; Age differences; Case reports; Anesthetics; Metabolism; Monitoring; Body temperature regulation; Pharmacokinetics; Sutures; Postoperative care; Antibiotics; Bandages; Literature reviews

326
NAL Call. No.: 41.8 AM3
Surgical techniques for neutering 6- to 14-week-old kittens. Aronsohn, M.G.; Faggella, A.M.
Schaumburg, Ill. : The Association; 1993 Jan01.
Language: English
Descriptors: Kittens; Castration; Ovariectomy; Postoperative complications; Anesthesia; Age

327
NAL Call. No.: SF911.V43
Veterinary surgery v. 23 (3): p. 195-200; 1994 May. Includes
328  NAL Call. No.: SF985.F4
Suspected adverse reaction to xylazine-ketamine anesthesia in a cat. Raptopoulos, D.; Papazoglou, L.; Galatos, A.
Includes references.
Language: English
Descriptors: Cats; Xylazine; Ketamine; Adverse effects

329  NAL Call. No.: SF911.V43
Suspected malignant hyperthermia after halothane anesthesia in a cat. Bellah, J.R.; Robertson, S.A.; Buergelt, C.D.; McGavin, A.D.
Hagerstown, Md. : J.B. Lippincott Company; 1989 Nov.
Language: English
Descriptors: Cat; Halothane; Anesthesia; Hyperthermia; Case studies

330  NAL Call. No.: RS160.J6
Tabernaemontana crassa as a traditional local anesthetic agent. Agwu, I.E.; Akah, P.A.
Includes references.
Language: English
Descriptors: Frogs; Tabernaemontana crassa; Medicinal plants; Folk medicine; Local anesthetics; Reflexes

331  NAL Call. No.: SF911.V43
Thermal burns in four dogs during anesthesia.
Dunlop, C.I.; Daunt, D.A.; Haskins, S.C.
Includes references.
Language: English
Descriptors: Dogs; Anesthesia; Burns; Hypothermia

332  NAL Call. No.: SF915.J63
Thiamylal- and halothane-sparing effect of diazepam in dogs.
Muir, W.W. III; Bednarski, L.; Bednarski, R.
Language: English
Descriptors: Dogs; Diazepam; Preanesthetic medication; Halothane; Anesthetics; Dosage

333  NAL Call. No.: SF911.V43
Greene, S.A.; Benson, G.J.; Hartsfield, S.M.
Hagerstown, Md. : J.B. Lippincott Company; 1993 Jan.
Language: English
Time of death of CNS tumor-bearing rats can be reliably predicted by body weight-loss patterns.

Redgate, E.S.; Deutsch, M.; Boggs, S.S.

Abstract: A request by the Institutional Animal Care and Use Committee for an alternative to death as an end point in a cancer research project using a rat brain 9L tumor cell model led to a search for reliable criteria for predicting time of death in this type of experiment. These experiments evaluated the therapeutic effectiveness of radiation alone, continuous intracerebral infusions of 5-iodo-2-deoxyuridine (IUDR) alone, and a combination of both therapies. We found that a characteristic pattern of body weight changes occurs after injection of 9L tumor cells into the brain ventricles or parenchyma. The initial phase was characterized by a loss of body weight which appeared to be related to surgery and, in the irradiated groups, to the subsequent doses of radiation under anesthesia on days 4, 6, and 7. After this initial phase (phase 1), a second period of weight change (phase 2) which was characterized by an overall gain of body weight interrupted temporarily in 76 out of the 149 rats by reversible episodes of weight loss of 1 to 5 days duration. The length of this phase 2 weight gain period was significantly extended by XRT-IUDR treatment in the rats with intraparenchymal tumors. The third and final phase consisted of a period of irreversible weight loss which may be related to cachexia. The third phase was similar in duration for control, XRT, IUDR and XRT-IUDR groups of rats and had a mean length of 9.8 +/- 0.27 days. Since the duration of this third phase was independent of treatment and significantly longer than the reversible episodes of weight loss in phase 2, it was predictive of the mean time of death in a group of rats. When the end of phase 2 was reliably determined, the time of death could be predicted to be 9.8 +/- 0.27 days later on average. This method accurately predicted the time of death in a pooled series of experiments in which death was used as an endpoint.

Tissue response to intramuscular and intraperitoneal injections of ketamine and xylazine in rats.

Abstract: Ketamine-xylazine is a widely accepted anesthetic combination for laboratory animals. Although frequently recommended for administration by intramuscular (IM) or intraperitoneal (IP) routes, the potential for tissue damage following either route of administration in the rat has not been investigated. This study evaluated tissue damage after IM use at two doses in Fischer 344 and Sprague-Dawley rats. Tissue reactions following IP injections of ketamine-xylazine were compared to lesions produced by IM injections in animals euthanized on 1, 3 and 14 days post-injection. Results showed muscle necrosis present in nearly all ketamine-xylazine injected limbs. Intraperitoneal injections produced no significant lesions in the peritoneal cavity when careful IP injection techniques were used. Ketamine-xylazine should not be administered by the IM route for survival procedures in...
these two widely used strains of rats.

336 NAL Call. No.: 41.8 R312
Total venous flow occlusion in the normothermic dog: a study of haemodynamic, metabolic and neurological consequences.
Hunt, G.B.; Malik, R.; Bellenger, C.R.; Pearson, M.R.B.

Language: English

Descriptors: Dogs; Venous circulation; Veins; Blockage; Surgery; Metabolism; Hemodynamics; Nervous system; Duration; Safety

Abstract: The acute haemodynamic and metabolic repercussions of total venous inflow occlusion were evaluated in six normal dogs, each of which underwent two four minute occlusions and one eight minute occlusion at normothermia. A further three dogs underwent a single eight minute period of occlusion and were allowed to recover from anaesthesia. Total venous inflow occlusion was well tolerated by all animals. They remained in sinus rhythm at the completion of occlusion, and unassisted haemodynamic recovery occurred rapidly. Recovery was quicker after four minutes than after eight minutes. There was no clinically detectable neurological impairment in three dogs which were allowed to recover.

337 NAL Call. No.: QL55.I5
Training adult male rhesus monkeys to actively cooperate during in-homecage venipuncture.
Reinhardt, V.
Sussex : The Institute; 1991 Apr.

Language: English

Descriptors: Macaca mulatta; Blood sampling; Training of animals

Abstract: A training technique is described for ensuring the active cooperation of adult male rhesus monkeys (Macaca mulatta) during in-homecage venipuncture. Five single-housed and 10 pair-housed males (average age 8 years) were the subjects of the study. On average, 13 training sessions (range 2-26) were necessary to get a male to voluntarily present a leg in a specially designed opening of the door and to display no resistance during venipuncture. Total time spent with a male until he presented a leg ranged from 16 to 74 minutes, with an average of 40 minutes. Neither the trainer nor the animals received any injuries during the training. Once trained, all males cooperated during in-homecage venipuncture not only with the trainer but also with the attending caretakers. One to two minutes were required to draw a blood sample. It was concluded that training adult male rhesus monkeys to actively cooperate during in-homecage venipuncture increases the scientific value of research by reducing undue distress reactions associated with immobilization. Since the animals cooperate rather than resist, in-homecage venipuncture also minimizes the risk of injury.

338 NAL Call. No.: S67.P82
Transportation of warmwater fish: procedures and loading rates. Jensen, G.H.

Language: English

Descriptors: Fishes; Transport of animals; Salt; Anesthetics; Water hardness; Temperature; Loading
Transportation of warmwater fish--procedures and loading rates. Jensen, G.L.
Stoneville, Miss. : Southern Regional Aquaculture Center; 1990

Language: English

Descriptors: Fishes; Transport of animals; Salt; Anesthetics;
Water hardness; Temperature; Loading

340 NAL Call. No.: SF911.V43

Trigger points in 48 dogs with myofascial pain syndromes.
Janssena, L.A.A.

Language: English

Descriptors: Dogs; Pain; Lameness; Anesthetics; Analgesics

341 NAL Call. No.: QL55.A1L3

The use lignocaine-prilocaine local anaesthetic cream for pain-free venepuncture in laboratory animals. Flecknell, P.A.; Liles, J.H.; Williamson, H.A.
London : Royal Society of Medicine Services; 1990 Apr.
Laboratory animals v. 24 (2): p. 142-146; 1990 Apr. Includes references.

Language: English

Descriptors: Laboratory animals; Local anesthetics; Local anesthesia; Lidocaine; Intravenous injection; Ointments

Abstract: An assessment was made of the effects of topical application of a eutectic mixture of local anaesthetics (EMLA cream) in a number of species of laboratory animals. Application of EMLA cream enabled percutaneous insertion of catheters into the cephalic vein in dogs and cats and the marginal ear vein in rabbits without causing any detectable pain or discomfort. Application to the tail in rats prior to percutaneous cannulation of the lateral tail vein did not produce a significant reduction in the behavioural responses to venepuncture. EMLA cream represents a useful refinement of current techniques for intravenous injection in some species, and is especially valuable when the procedure is to be undertaken by an inexperienced operator.

342 NAL Call. No.: SF991.A1C3

Use of a bite plate to relieve a painful malocclusion in a male miniature poodle. Crossley, D.A.

Language: English

Descriptors: Dogs; Mouth diseases; Pain; Dentistry; Case reports

343 NAL Call. No.: SF914.A53 1990

Use of analgesic for postsurgical pain in dogs and cats.
Sawyer, D.C.

Language: English

Descriptors: Dogs; Cats; Analgesics

344 NAL Call. No.: 41.8 ON1

Language: English

Descriptors: South Africa; Freshwater fishes; Electric current; Narcosis; Anesthetics


Language: English

Descriptors: Dogs; Morphine; Pain; Conduction anesthesia


Language: English

Descriptors: Rats; Anesthesia; Ketamine; Chylomicron lipids; Lipid metabolism; Skeletal muscle; Heart; Kidneys

Abstract: Ketamine with 10% acepromazine (Km/Ac) was evaluated for use in an investigation of plasma chylomicron-triglyceride clearance in rats. Clearance rate and the half-life of radiolabeled (14C) chylomicron triglycerides plus tissue uptake of 14C-fatty acids were equal in Km/Ac anesthetized and non-anesthetized rats. Km/Ac was found to be a suitable anesthesia in rats for the study of plasma chylomicron-triglyceride clearance.


Language: English

Descriptors: Dogs; Cats; Anesthesia; Oxygen; Flow


Language: English

Descriptors: Rats; Mice; Rabbits; Pain; Antiinflammatory agents; Analgesics; Dosage; Adverse effects

Abstract: The data concerning the use of non-steroidal anti-inflammatory drugs (NSAIDs) and evidence for their efficacy in laboratory rats and mice are reviewed. This information is then extrapolated to clinical situations and dose rates that
take account of ulcerogenic side effects are recommended. NSAIDs have the potential to be a very useful group of analgesics and should always be considered when attempting to provide pain relief in laboratory animals.

349 NAL Call. No.: 391.8 F73
Use of ophthalmic topical anaesthetics.
Language: English
Descriptors: Eyes; Anesthetics; Irritant properties; Testing; Topical application; Rabbits

350 NAL Call. No.: SF910.P34A55 1992
Use of opioids in providing postoperative analgesia in the dog: a double-blind trial of pethidine, pentazocine, buprenorphine, and butorphanol. Waterman, A.E.; Kalthum, W.
Language: English
Descriptors: Dogs; Opioids; Postoperative care; Analgesics; Trials; Pethidine; Anesthetics; Drug effects

351 NAL Call. No.: SF601.J62
Use of the laboratory rabbit in the small animal student surgery laboratory. Boothe, H.W.; Hartsfield, S.M.
Language: English
Descriptors: Veterinary education; Surgery; Rabbits; Anesthesia; Surgical operations; Learning experiences; Animal anatomy; Animal testing alternatives

352 NAL Call. No.: SF601.C66
Using bupivacaine hydrochloride for lumbosacral epidural analgesia. Heath, R.B.; Broadstone, R.V.; Wright, M.; Grandy, J.L.
Language: English
Descriptors: Dogs; Limbs; Surgery; Analgesics; Anesthesia; Loins; Spines

353 NAL Call. No.: 41.8 AM3
Vaporizer in circle for delivery of isoflurane to dogs.
Bednarski, R.M.; Gaynor, J.S.; Muir, W.W. III
Language: English
Descriptors: Dogs; Anesthetics; Vaporization; Veterinary equipment; Drug delivery systems; Safety
Vecuronium infusion in the dog.
Jones, R.S.; Young, L.E.
London: British Small Animal Veterinary Association; 1991

Language: English
Descriptors: Dogs; Muscle relaxants; Anesthesia; Dosage; Neostigmine; Atropine

Ventricular arrhythmogenic dose of epinephrine in dogs and cats anesthetized with tiletamine/zolazepam and halothane.
Bednarski, R.M.; Muir, W.W. III

Language: English
Descriptors: Dogs; Cats; Epinephrine; Dosage; Arrhythmia; Halothane; Injectable anesthetics; Anesthesia

Abstract: The ventricular arrhythmogenic dose of epinephrine (ADE) was determined in 6 dogs anesthetized with halothane alone or with halothane after injection of tiletamine/zolazepam (TZ). Respiratory rate and tidal volume were controlled and sodium bicarbonate was administered to maintain arterial pH and blood gas values within reference range. Heart rate and arterial blood pressure were recorded during determination of the ADE. The ADE (mean +/- SD) was no different during anesthesia with use of halothane alone (8.9 +/- 4.3) than it was when injections of TZ preceded administration of halothane (6.7 +/- 2.8).

Tiletamine/zolazepam was also administered IV immediately after determination of the ADE during halothane-induced anesthesia. The TZ administered in this manner did not alter the ADE. Blood pressure and heart rate were significantly greater during infusion of epinephrine than immediately prior to infusion. The administration of TZ did not alter blood pressure response. The ADE was also determined in 6 cats anesthetized with halothane preceded by administration of TZ. The ADE (mean +/- SD) was 0.7 +/-0.23 microgram/kg, a value similar to that reported for cats during anesthesia with halothane alone.

The veterinarian's responsibility: assessing and managing acute pain in dogs and cats. I.
Johnson, J.M.

Language: English
Descriptors: Dogs; Cats; Pain; Treatment; Animal welfare; Postoperative care

The veterinarian's responsibility: assessing and managing acute pain in dogs and cats. II.
Johnson, J.M.

Language: English
Descriptors: Dogs; Cats; Pain; Analgesics; Animal welfare; Opioids; Drug combinations; Postoperative care
Anesthesia and Analgesia for Companion and Laboratory Animals, QB 95-12

358


Language: English
Descriptors: Dogs; Anesthesia; Neuroleptics; Opioids; Drug combinations; Methodology

359


Language: English
Descriptors: Animal testing alternatives; Models; In vitro; Capsaicin; Neurotoxins; Pain; Neurons; Recording

360


Language: English
Descriptors: Hypophosphatemia; Phosphates; Phosphorus; Deprivation; Diet; Nutrient transport; Kidneys; Mice

Abstract: We examined the effect of the X-linked hypophosphatemic Gy mutation on the maximal renal tubular reabsorption of phosphate (Tm(P)) and compared the effects of phosphate deprivation on both Tm(P) and Na+-dependent phosphate transport in renal brush-border membrane vesicles (BBMV). Adult female normal and Gy mice were fed a control (1.0% P) or low-phosphate (0.03% P) diet for 5 days. For Tm(P) measurement, anesthetized mice were infused intravenously with [3H]inulin and increasing increments of phosphate (0, 0.27, 0.54, and 1.08 micromoles/min). Tm(P) was significantly reduced in Gy mice on the control diet. Normal mice responded to the low-phosphate diet by raising their Tm(P) [2.35 +/- 0.12 (n = 9) vs. 3.71 +/- 0.16 (n = 9) micromoles/ml glomerular filtrate, mean +/- SE, P < .001], whereas in Gy mice, the change was not significant [1.46 +/- 0.10 (n = 10) vs. 1.70 +/- 0.11 (n = 10)]. In contrast, Gy mice did respond to phosphate restriction by increasing the initial-rate Na+-dependent phosphate transport in the renal BBMV [314 +/- 11 (n = 5) vs. 1,105 +/- 157 (n = 5) pmol/mg protein-1.6 s-1, P < 0.01] as did normal mice [583 +/- 64 (n = 5) vs. 1,692 +/- 203 (n = 5) pmol/mg protein-1.6 s-1, P < .01]. In conclusion, the adaptive increase in Na+-phosphate cotransport in the brushborder membrane of the proximal tubule is not sufficient for the overall increase in Tm(P) in the whole kidney in response to dietary phosphate deprivation.

361


Language: English
Descriptors: Dogs; Preanesthetic medication; Anesthetics
Xylazine-induced pulmonary edema in rats.
Amouzadeh, H.R.; Sangiah, S.; Qualls, C.W. Jr; Cowell, R.L.; Mauromoustakos, A.

Language: English

Descriptors: Xylazine; Drug toxicity; Lungs; Edema; Etiology; Rats

Abstract: Inhibitors of cytochrome P450, such as SK&F 525-A, prolong the duration of xylazine-ketamine anesthesia and cause pulmonary edema (PE) and death in rats. To determine the cause of PE, Sprague-Dawley rats were given a single dose of xylazine (21 mg/kg, im) alone or in combination with ketamine (45 mg/kg, im) and/or SK&F 525-A (50 mg/kg, ip) and percentage lung to body weight (%LW/BW) ratios (as an indicator of PE) were compared. The results indicated that xylazine caused PE which was independent of ketamine and was enhanced by SK&F 525-A. Subsequently, it was determined that 42 mg/kg xylazine, im, is an optimal edemagenic dose. Xylazine (42 mg/kg, im) increased the %LW/BW ratio as compared to control. Pleural effusion (PLE) of various amounts was observed in 75% of the animals. The pleural fluid to serum protein ratio for xylazine was similar to that obtained for alpha-naphthylthiourea (5 mg/kg, ip). Extensive serous PLE and alveolar edema with hemorrhage were found at necropsy in xylazine-treated rats. Pretreatment with yohimbine (4.2 mg/kg), prazosin (20 mg/kg), tolazoline (20 mg/kg), yohimbine (4.2 mg/kg) plus prazosin (20 mg/kg), atropine (20 mg/kg), dimethyl sulfoxide (DMSO) (7.8 g/kg), allopurinol (50 mg/kg), superoxide dismutase (20,000 U/kg), catalase (20,000 U/kg), BW755C (50 mg/kg), ibuprofen (50 mg/kg), cystathionine (100 mg/kg) plus taurine (100 mg/kg) did not affect the %LW/BW ratio. PLE was increased by yohimbine, yohimbine plus prazosin, and allopurinol, reduced by DMSO, and not changed in other groups. The results indicate that xylazine caused increased-permeability PE characterized by rapid onset, cellular damage and protein-rich pleural fluid. PE may not be mediated by adverse cardiovascular effects of xylazine and oxygen radicals are possibly involved in its etiology.

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