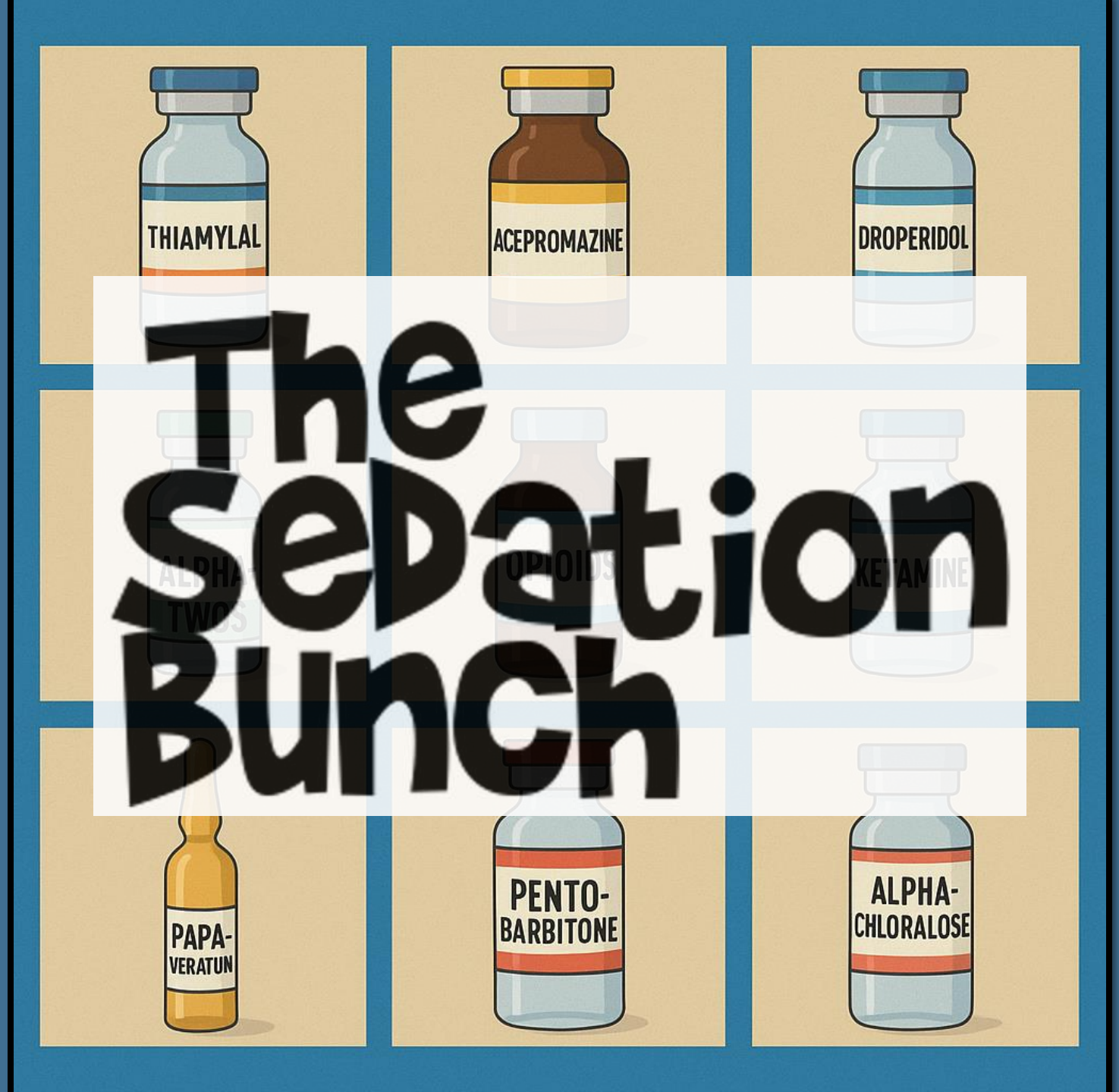
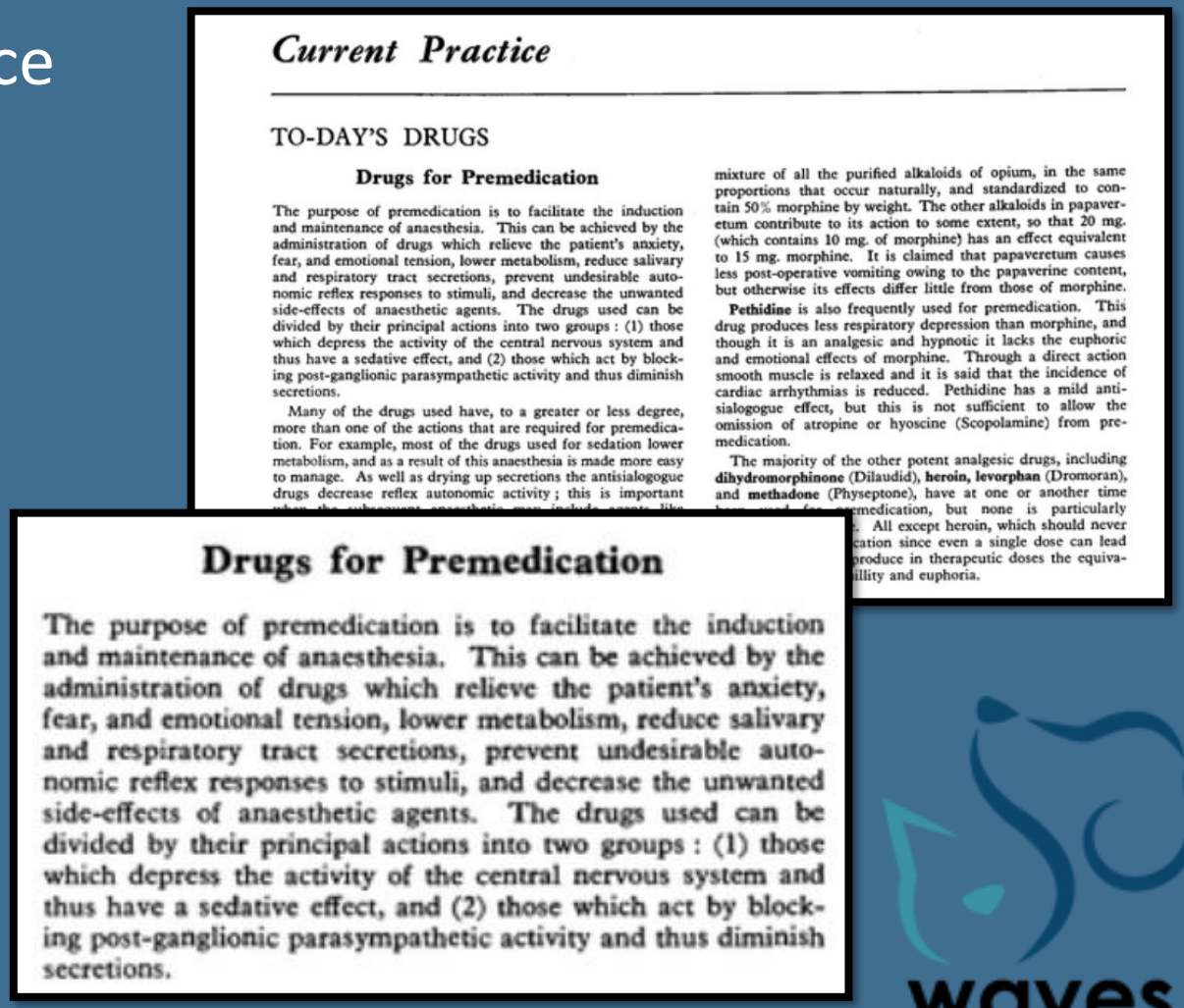


The Sedation Bunch

Retro - Purpose of sedation/ premedication

- Facilitate induction and maintenance
- Relieve patient's anxiety and fear
- Decrease unwanted side-effects
- Relieve EMOTIONAL TENSION



Current Practice

TO-DAY'S DRUGS

Drugs for Premedication

The purpose of premedication is to facilitate the induction and maintenance of anaesthesia. This can be achieved by the administration of drugs which relieve the patient's anxiety, fear, and emotional tension, lower metabolism, reduce salivary and respiratory tract secretions, prevent undesirable autonomic reflex responses to stimuli, and decrease the unwanted side-effects of anaesthetic agents. The drugs used can be divided by their principal actions into two groups : (1) those which depress the activity of the central nervous system and thus have a sedative effect, and (2) those which act by blocking post-ganglionic parasympathetic activity and thus diminish secretions.

Many of the drugs used have, to a greater or less degree, more than one of the actions that are required for premedication. For example, most of the drugs used for sedation lower metabolism, and as a result of this anaesthesia is made more easy to manage. As well as drying up secretions the antisialogogue drugs decrease reflex autonomic activity ; this is important

mixture of all the purified alkaloids of opium, in the same proportions that occur naturally, and standardized to contain 50% morphine by weight. The other alkaloids in papaveretum contribute to its action to some extent, so that 20 mg. (which contains 10 mg. of morphine) has an effect equivalent to 15 mg. morphine. It is claimed that papaveretum causes less post-operative vomiting owing to the papaverine content, but otherwise its effects differ little from those of morphine.

Pethidine is also frequently used for premedication. This drug produces less respiratory depression than morphine, and though it is an analgesic and hypnotic it lacks the euphoric and emotional effects of morphine. Through a direct action smooth muscle is relaxed and it is said that the incidence of cardiac arrhythmias is reduced. Pethidine has a mild antisialogogue effect, but this is not sufficient to allow the omission of atropine or hyoscine (Scopolamine) from premedication.

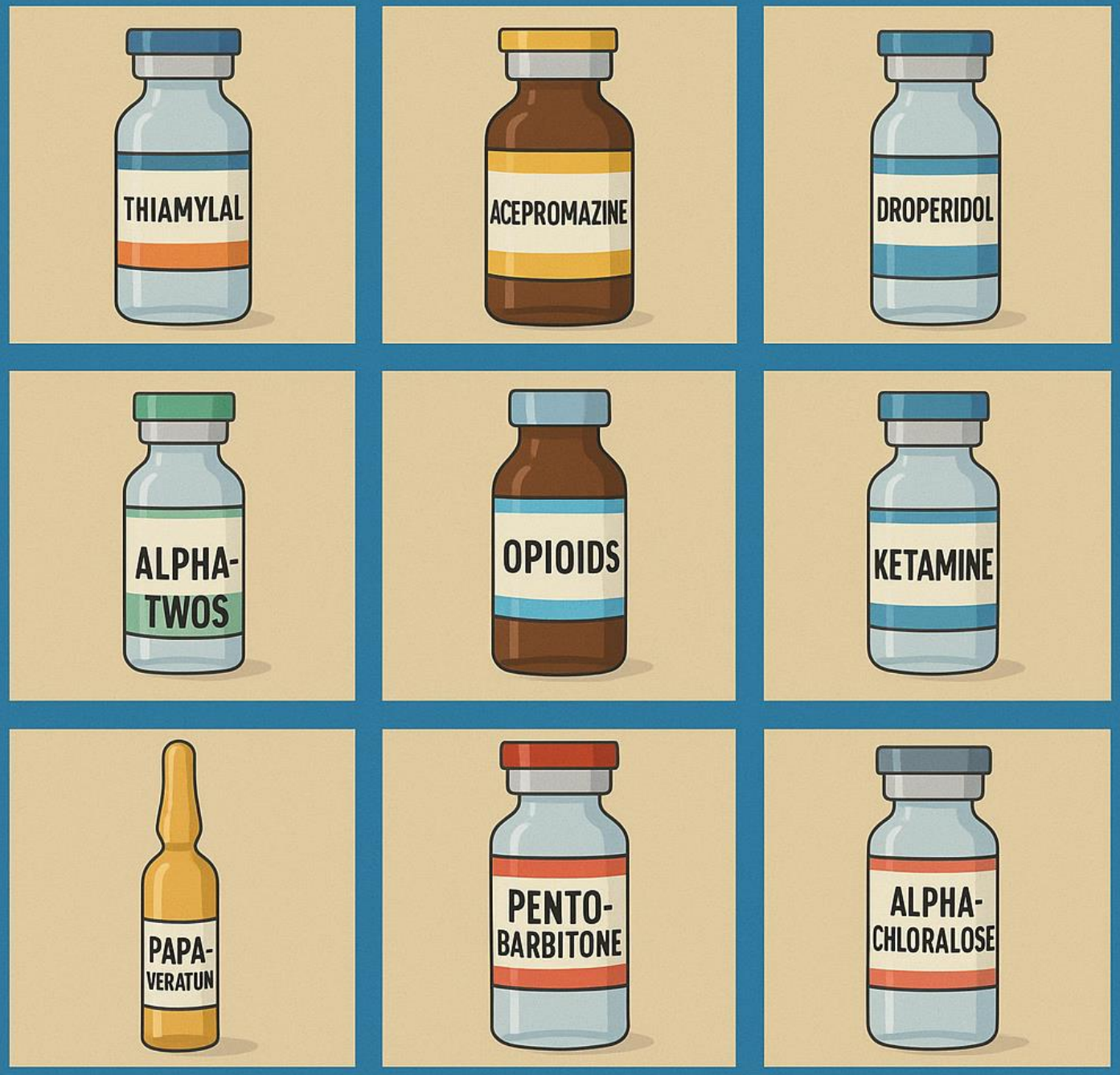
The majority of the other potent analgesic drugs, including **dihydromorphinone** (Dilaudid), **heroin, levorphan** (Dromoran), and **methadone** (Physeptone), have at one or another time

medication, but none is particularly . All except heroin, which should never cation since even a single dose can lead roduce in therapeutic doses the equivaillity and euphoria.

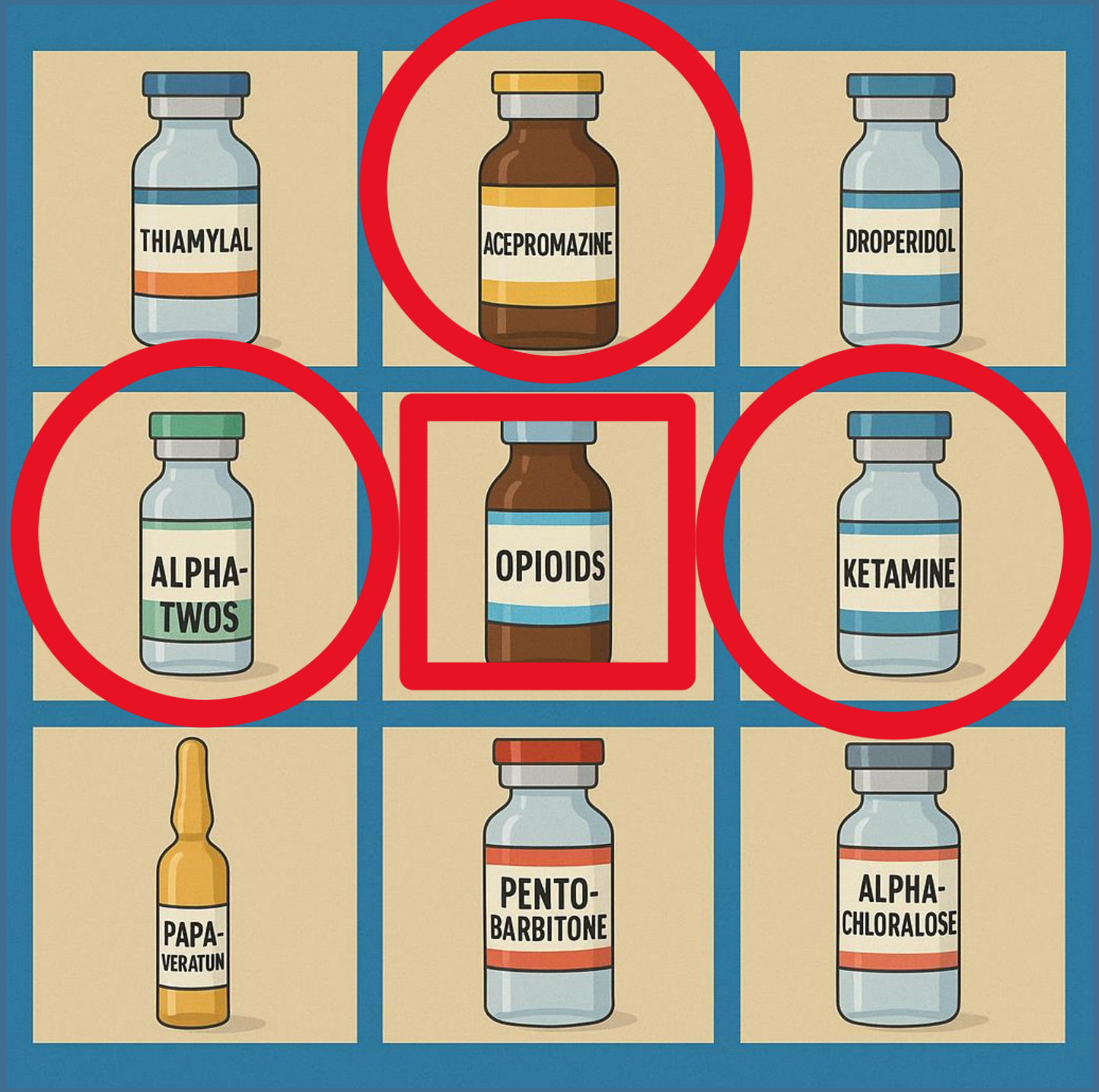
Drugs for Premedication

The purpose of premedication is to facilitate the induction and maintenance of anaesthesia. This can be achieved by the administration of drugs which relieve the patient's anxiety, fear, and emotional tension, lower metabolism, reduce salivary and respiratory tract secretions, prevent undesirable autonomic reflex responses to stimuli, and decrease the unwanted side-effects of anaesthetic agents. The drugs used can be divided by their principal actions into two groups : (1) those which depress the activity of the central nervous system and thus have a sedative effect, and (2) those which act by blocking post-ganglionic parasympathetic activity and thus diminish secretions.

waves



1) Thiamylal
2) Acepromazine
3) Droperidol
4) Alpha 2s
5) Ketamine
6) Papaveretum
7) Pentobarbitone
8) Alpha-chloralose
9) Opioids


THIAMYLAL
ACEPROMAZINE
DROPERIDOL
ALPHA-TWOS
OPIOIDS
KETAMINE
PAPA-VERATUN
PENTO-BARBITONE
ALPHA-CHLORALOSE

Current: Purpose of premedication/sedation

Current Reasons	Retro Reasons
• Relieve anxiety • Smooth induction, maintenance, recovery • Reduce catecholamine release • Reduce unwanted autonomic reflexes • Reduce muscle tone • Pre-emptive analgesia	• Relieve patient's anxiety and fear • Facilitate induction and maintenance • Relieve EMOTIONAL TENSION • Decrease unwanted side-effects

1. Alfaxalone

- Cyclodextrin solution
- Binds to GABAa -> neuronal hyperpolarisation-> CNS depression
- Rapid hepatic metabolism
- IM or IV

waves

Sedative and cardiorespiratory effects of intramu
administration of alfaxalone and butorphanol
combined with acepromazine, midazolam, or
dexmedetomidine in dogs

Melissa A. Murdock BVM&S, C

DOI: https://doi.org/10.2460/

Volume/Issue: Volume 81: Iss

Received: 06 Mar 2019 | Acce

J Vet Med Sci. 2020 Nov 13;83(1):53–61. doi: 10.1292/jvms.20-0330

The anesthetic effects of intramuscular alfaxalone in dogs premedicated with low-dose medetomidine and/or butorphanol

un TAMURA [1], Norihiko OYAMA [1], Tadashi

formation

iorespiratory effects of
llowing premedication with low-
th (medetomidine–butorphanol) in
ng/kg alfaxalone IM following
A-IM), butorphanol (0.3 mg/kg; BA-

ELSEVIER

Veterinary Anaesthesia and Analgesia

Volume 44, Issue 5, September 2017, Pages 1184-1188

Short communication

Sedative and physiologic effects of low-dose intramuscular alfaxalone in dogs

Jill K. Maney

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https://doi.org/10.1016/j.vaa.2016.11.013

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Alfaxalone Dosing & Considerations

- 1 – 2 mg/kg IV
- Up to 5 mg/kg IM cats
- 1 – 2 mg/kg IM dogs ?

- Mild cardiovascular & respiratory depression

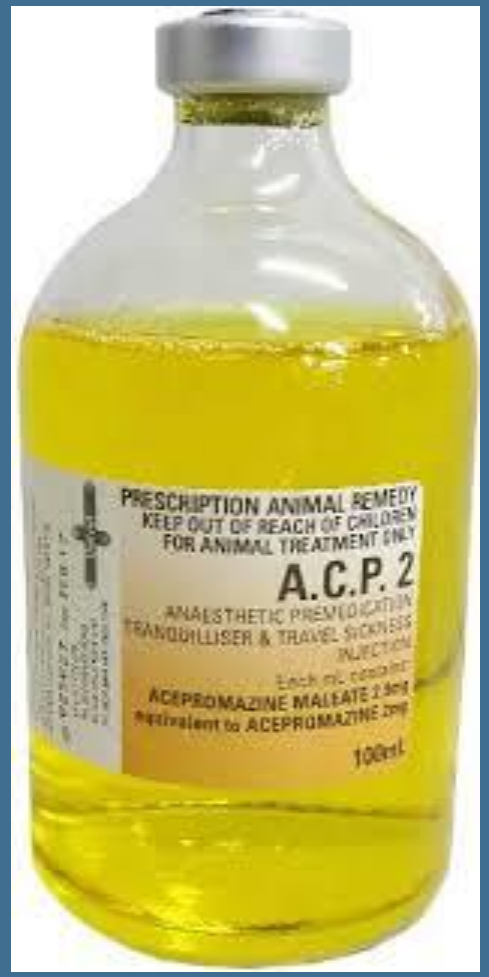
- Works well when combined with opioids

- Best in cats and small dogs as volume becomes too large in bigger dogs

waves

2. Acepromazine

- Phenothiazine
- Hepatic metabolism
- IM, IV, PO



Anti-adrenergic
Anti-dopaminergic
Anti-histaminic
Anti-serotonergic
Anti-cholinergic
Anti-arrhythmic

waves

Acepromazine Dosing

- Injectable dose: 0.01 – 0.05 mg/kg (up to 0.1) IM
- Oral dose 1 mg/kg (0.25 – 3 mg/kg)
- Combine with an opioid for better effect

waves

Acepromazine Considerations

- Not anxiolytic, analgesic or reversible
- Consider adding a benzodiazepine if anxiolysis required
- Long duration
- Caution in patients with hepatic dysfunction

3. Trazodone

- 5HT2A antagonist and SRI
- Calming and reduced anxiety in hospitalised patients
- Metabolised by the liver
- PO

▸ J Am Vet Med Assoc. Author manuscript; available in PMC: 2015 Aug 1.

Published in final edited form as: J Am Vet Med Assoc. 2014 Aug 1;245(3):296–301. doi: 10.2460/javma.245.3.296

The Use of Trazodone to Facilitate Post-Surgical Confinement in Dogs

Margaret E Gruen [1], Simon C Roe [1], Emily Griffith [1], Alexandra Hamilton [1], Barbara L Sherman [1,*]

▸ Author information ▸ Copyright and License information

PMCID: PMC4414248 NIHMSID: NIHMS682922 PMID: 25029308

The publisher's version of this article is available at J Am Vet Med Assoc

Abstract

Objective

waves

Trazodone Doses & Considerations

- 2 – 10 mg/kg up to q8h
- Caution in patients with renal and hepatic disease
- Care in patients with glaucoma and MAOIs

waves

4. Alpha 2 agonists

- Act centrally and peripherally at alpha 2 adrenoreceptors (pre- and post-synaptically)
- Sedative, Muscle relaxant, Anxiolytic
- Neuroprotection/ possible anticonvulsant
- Metabolised by the liver
- IM, IV, IN, OTM

waves

Medetomidine Doses

- WIDE range

  Dogs: 1 – 20 mcg/kg IM

  Cats: 10 – 50 mcg/kg/IM

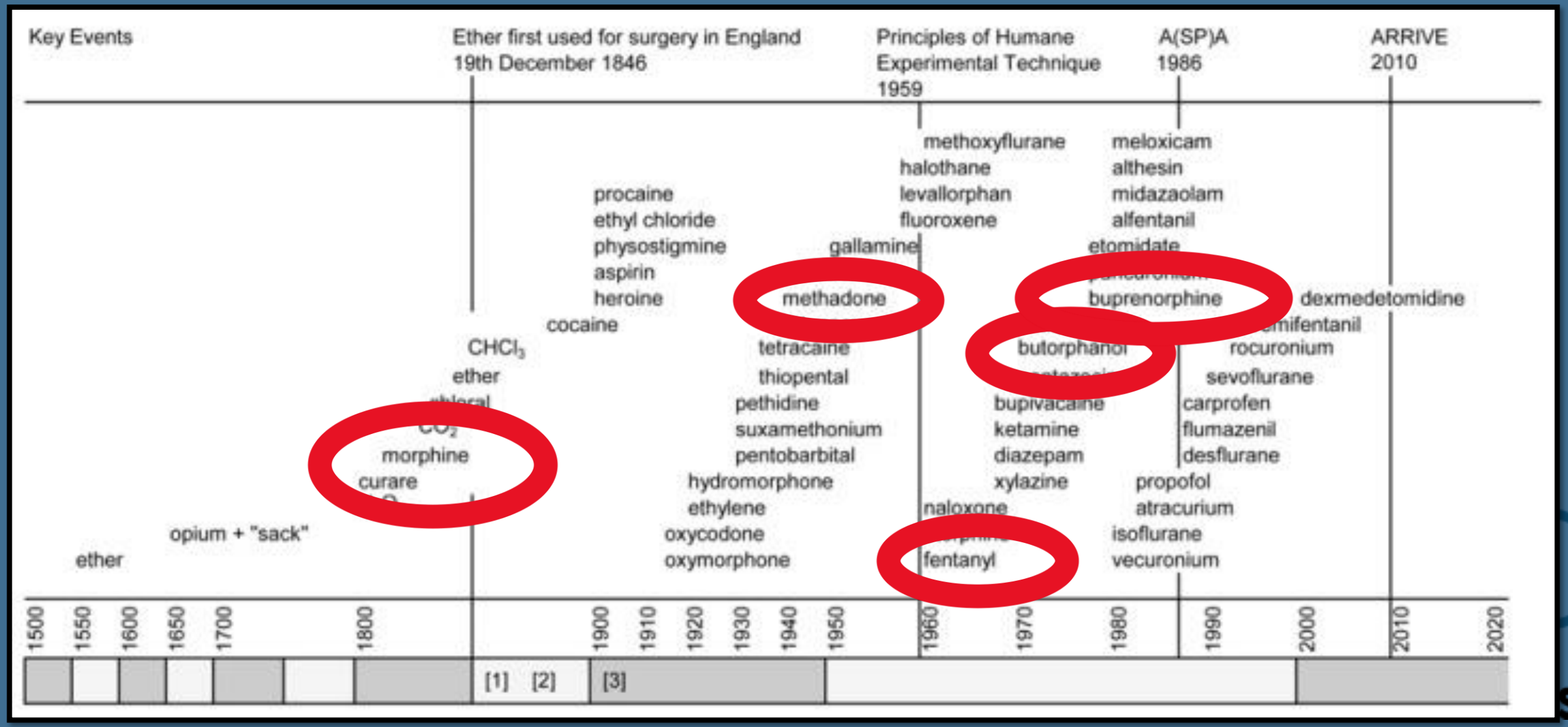
- Dexmedetomidine dose approximately half medetomidine dose

- Sileo – OTM dexmedetomidine for noise stimulus

Alpha – 2 Considerations

- Hypertension (vasoconstriction) and centrally-mediated bradycardia
- Sudden, brief arousal can occur with painful stimulus
- Can be reversed

5) Opioids


Key Events
Ether first used for surgery in England
19th December 1846
Principles of Humane
Experimental Technique
1959
A(SP)A
1986
ARRIVE
2010
methoxyflurane
halothane
levallorphan
fluoroxene
meloxicam
althesin
midazaolam
alfentanil
etomidate
procaine
ethyl chloride
physostigmine
aspirin
heroine
cocaine
gallamine
methadone
buprenorphine
dexmedetomidine
CHCl3
ether
tetracaine
thiopental
pethidine
suxamethonium
pentobarbital
hydromorphone
ethylene
oxycodone
oxymorphone
butorphanol
bupivacaine
ketamine
diazepam
xylazine
naloxone
fentanyl
rocuronium
sevoflurane
carprofen
flumazenil
desflurane
propofol
atracurium
isoflurane
vecuronium
morphine
curare
opium + "sack"
ether
1500
1550
1600
1650
1700
1800
1900
1910
1920
1930
1940
1950
1960
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2020
[1]
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[3]

Opioids

- Used as neuroleptanalgesia
- Act on various receptors
- Mainly metabolised in the liver
- IM, IV, OTM

Table 4.3 The relative activities of some of the different opioids available at the various opioid receptors.

Drug	Mu opioid receptor	Kappa opioid receptor	Delta opioid receptor
Morphine	+++	+/−	+/−
Methadone	+++	−	−
Pethidine (meperidine)	++	+/−	−
Fentanyl	+++	−	−(+)
Etorphine	+++	++	++
Buprenorphine	+ + + (partial agonist)	++ (antag?)	+/−
Butorphanol	+ + (ag/antag?)	++	−
Naloxone (antagonist)	+++	++	+

Opioid Considerations

- May cause vomiting and slow GI motility
- May cause respiratory depression if used with other respiratory depressing drugs
- May cause excitement and/or hyperthermia in cats

6. Ketamine

- Dissociative anaesthetic agent: functional disorganisation of the CNS
- NMDA receptor antagonism
- Sedative and analgesic

- Hepatic metabolism but recovery due to redistribution and metabolism
- IM

waves

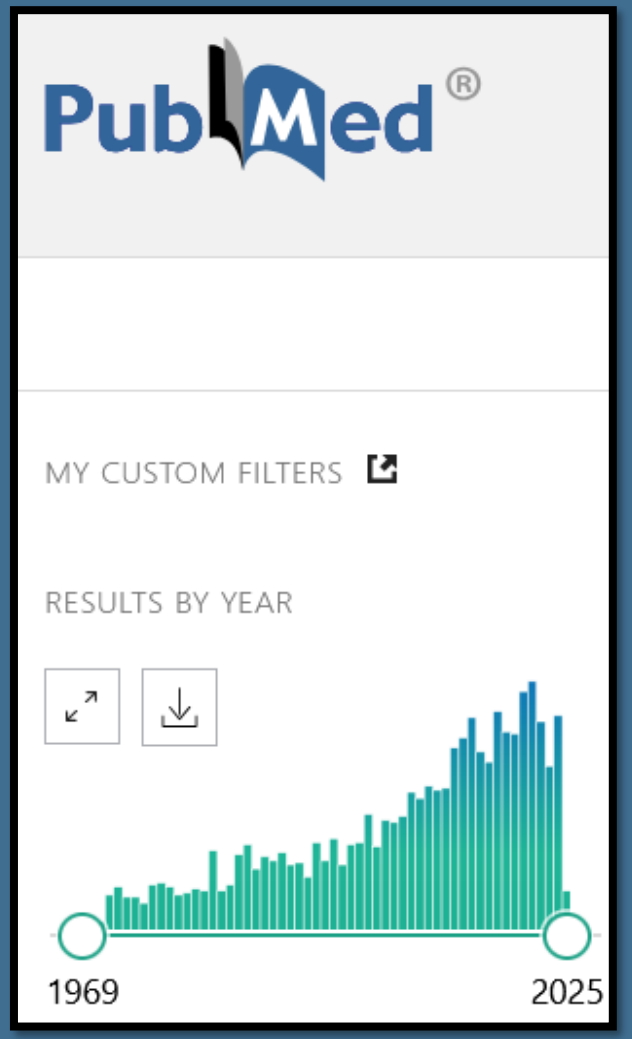
Ketamine Doses & Considerations

- 1 – 2 mg/kg IM dogs in combinations
- Up to 5 mg/kg IM for cats in combinations

- Not reversible

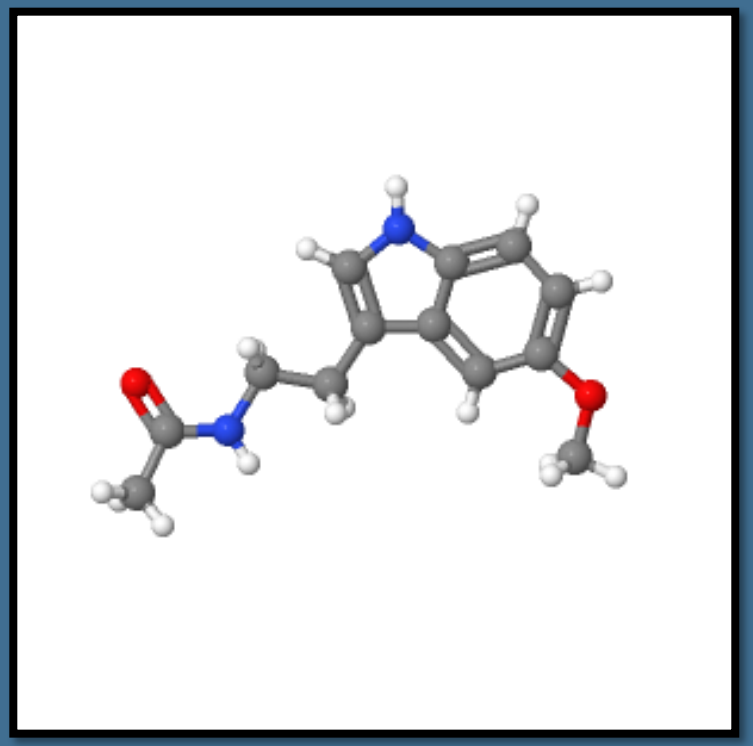
- Painful on injection

- Can have rough recovery



waves

7. Melatonin

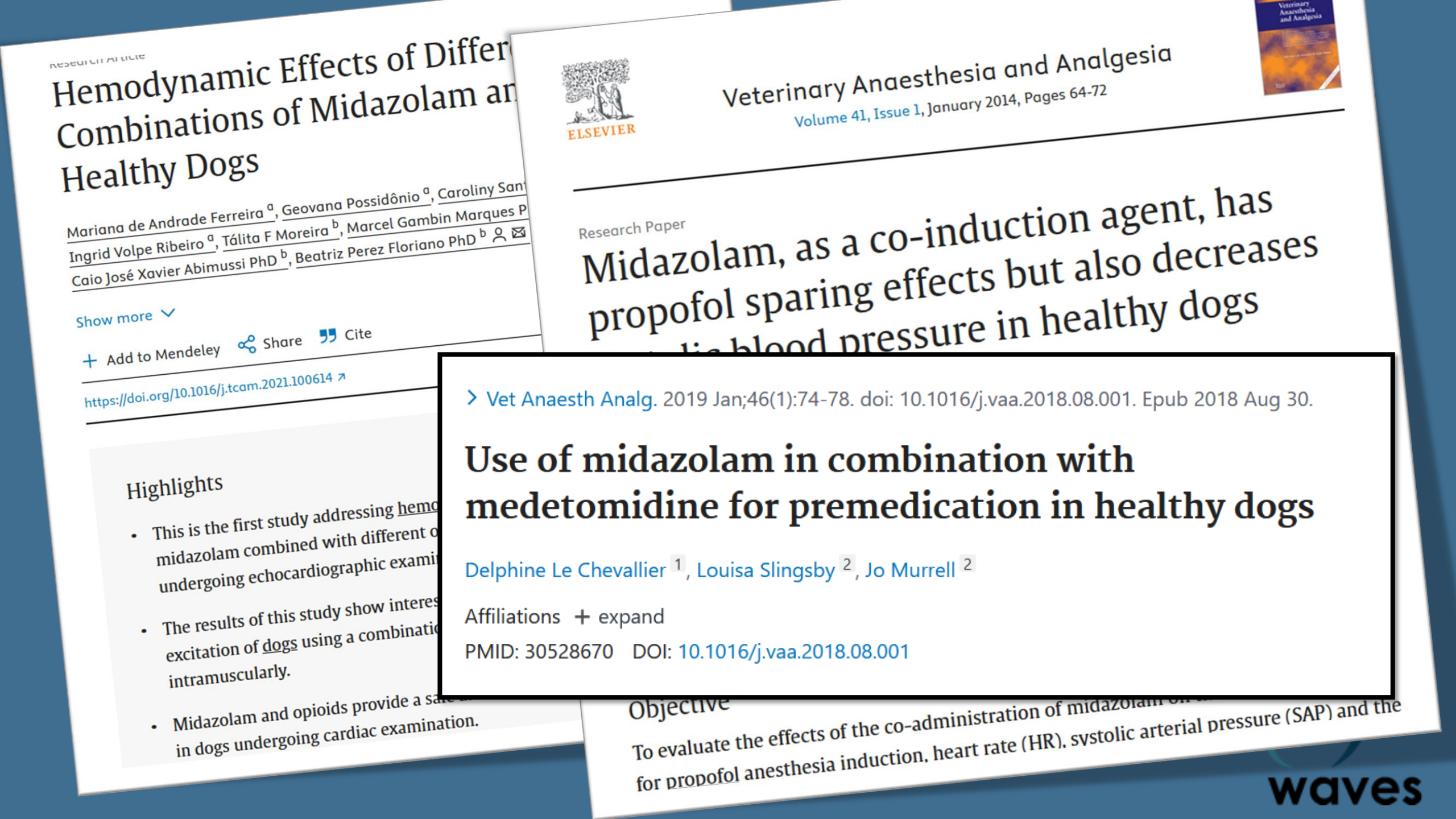


- Endogenous “sleep hormone”
- Dependent on light intensity
- Promotes sleep and inhibits wake-promoting signals
- 3 – 9 mg/Dog PO

8. Benzodiazepines

- Midazolam and diazepam
- Binds to GABAa -> enhance the affinity of channel opening by the agonist GABA-> CNS depression
- Rapid metabolism
- IM, IV, IN, PO, Rectal

waves



Research Article

Hemodynamic Effects of Differ
Combinations of Midazolam ar
Healthy Dogs

Mariana de Andrade Ferreira [a], Geovana Possidônio [a], Caroliny San
Ingrid Volpe Ribeiro [a], Tálita F Moreira [b], Marcel Gambin Marques P
Caio José Xavier Abimussi PhD [b], Beatriz Perez Floriano PhD [b]

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https://doi.org/10.1016/j.tcam.2021.100614

Highlights

- This is the first study addressing hemo
midazolam combined with different o
undergoing echocardiographic exami
- The results of this study show interes
excitation of dogs using a combinati
intramuscularly.
- Midazolam and opioids provide a sa
in dogs undergoing cardiac examination.

ELSEVIER

Veterinary Anaesthesia and Analgesia

Volume 41, Issue 1, January 2014, Pages 64-72

Research Paper

Midazolam, as a co-induction agent, has propofol sparing effects but also decreases blood pressure in healthy dogs

Vet Anaesth Analg. 2019 Jan;46(1):74-78. doi: 10.1016/j.vaa.2018.08.001. Epub 2018 Aug 30.

Use of midazolam in combination with medetomidine for premedication in healthy dogs

Delphine Le Chevallier [1], Louisa Slingsby [2], Jo Murrell [2]

Affiliations + expand

PMID: 30528670 DOI: 10.1016/j.vaa.2018.08.001

Objective

To evaluate the effects of the co-administration of midazolam on
for propofol anesthesia induction, heart rate (HR), systolic arterial pressure (SAP) and the

waves

Benzodiazepine Doses & Considerations

- 0.1 – 0.2 mg/kg IM IV
- True sedation is minimal
- May not be not effective if patient is already anxious or aggressive
- Paradoxical excitement can occur if used alone!

9. Gabapentin

- Similar to GABA (but does not bind at these receptors)
- Modulates voltage-gated Ca 2+ and K+ channels
- Used for generalised anxiety orders
- Metabolised 40% by the liver, excreted by kidney
- PO

Gabapentin Doses

- 50 – 100 mg PER CAT PO
- 10 – 30 (50) mg/kg Dog PO

Pregabalin

- Structural analogue GABA
- Modulates voltage-gated Ca 2+
- Anti-seizure drug but also used for anxiety
- 5 mg/kg cat

Animals (Basel). 2023 Jan 21;13(3):371. doi: 10.3390/ani13030371

Pregabalin Alleviates Anxiety and Fear in Cats during Transportation and Veterinary Visits—A Clinical Field Study

Terttu Lamminen [1,*], Mira Korpivaara [1], John Aspegrén [1], Clara Palestrini [2], Karen L Overall [3]

Editor: Mandy Paterson

Author information · Article notes · Copyright and License information

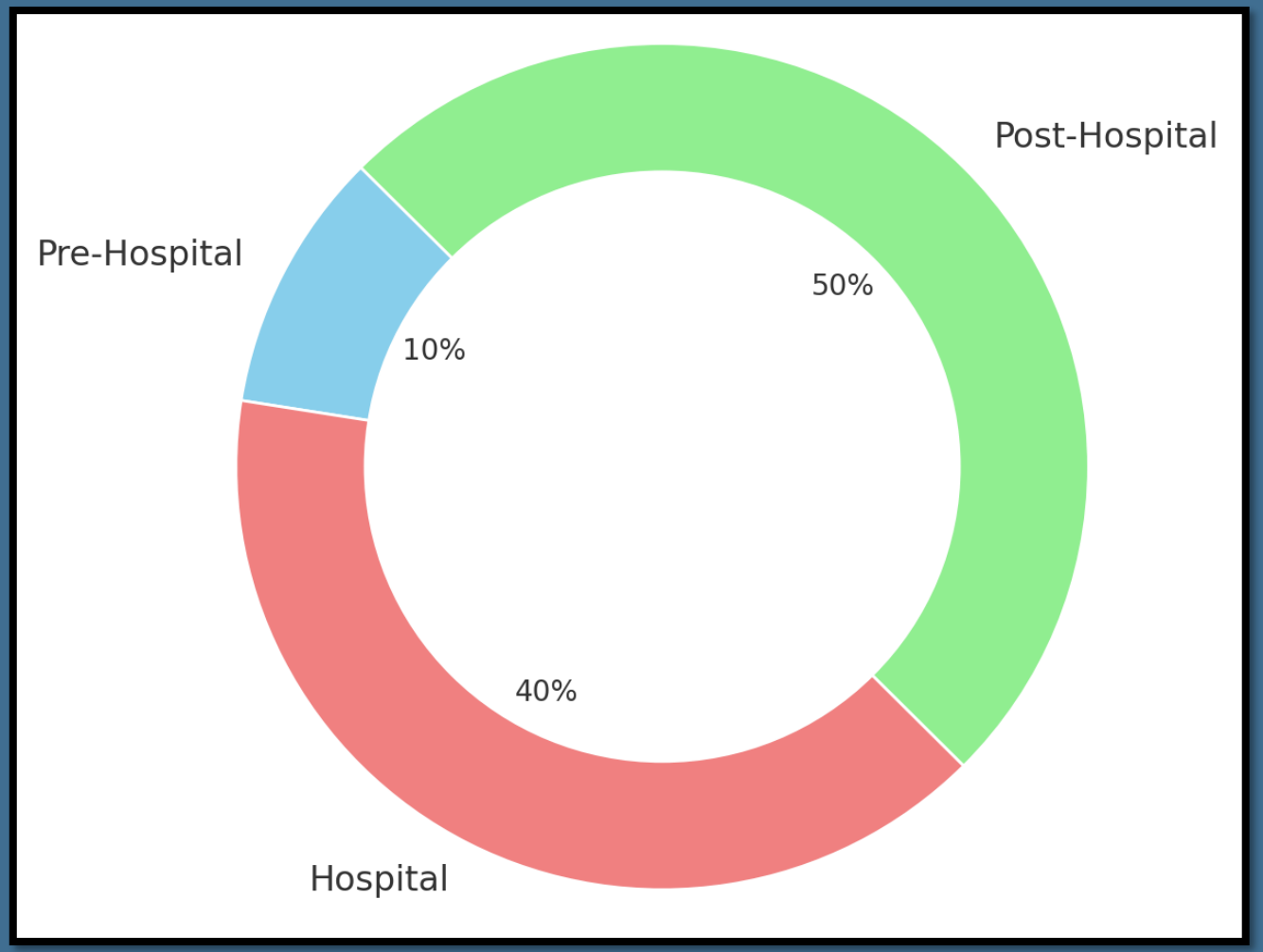
PMCID: PMC9913435 PMID: 36766260

travel and veterinary visits. One sequela is
quate veterinary care. The objective of this study
vel formulation of a pregabalin 50 mg/mL oral
cats during transport and veterinary visits. A
ner a flavored pregabalin oral solution at the
lacebo (n = 101) approximately 90 min before
g them in a car for at least 20 min to a veterinary
merical rating scale was evaluated during
transportation by the owner and during clinical examination by the veterinarian, both blinded to the treatment. In addition, to verify the owner assessment, an external expert blinded to the treatment and owner assessment evaluated the transportation video recordings using the same rating scale as the owner. Pregabalin 5 mg/kg statistically significantly decreased both travel- ($p < 0.01$) and veterinary-visit- ($p < 0.01$) related anxiety compared to the placebo. The external expert's evaluation was in agreement with the owners' assessment confirming the treatment effect during transportation ($p < 0.01$). Treatment was well tolerated with only a few cats showing transient slight incoordination and tiredness. The flavored oral solution formulation with a small dosing volume of 0.1 mL/kg was found by the owners to be user-friendly and was well-accepted by the cats. This study demonstrated that a single oral dosage of the novel pregabalin oral solution alleviates anxiety and fear related to transportation and veterinary visits in cats, thus providing practical aid for both owners and veterinarians to enable cat-friendly handling and improving the welfare of cats in situations they often perceive as very stressful.

waves

So now we know our bunch…how do we use them

- Pre-hospital
- Hospital
- Post-hospital



Pre-hospital

- gabapentin/ pregabalin (PO)
- trazodone (PO)
- melatonin (PO)
- dexmedetomidine (Sileo) (OTM)
- acepromazine (OTM)
- benzodiazepines (PO)

Plumb's

NEW SOLUTIONS FEATURES WHY PLUMB'S RESOURCES PRICING WATCH A DEMO

TOP TIPS FOR MANAGING ANXIETY AND FEAR IN VETERINARY PATIENTS

JUNE 12, 2024 | 5 MIN

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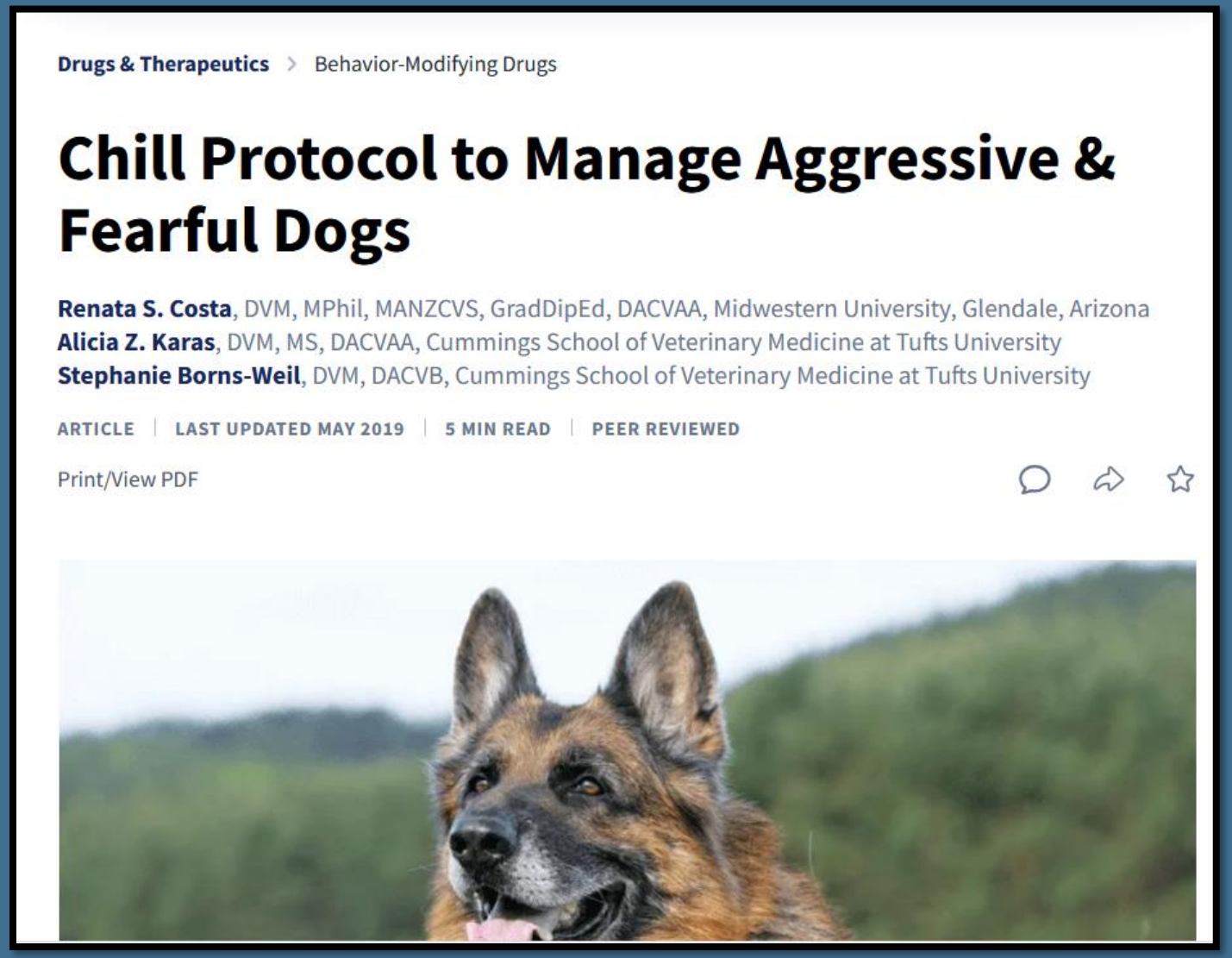
Drug	Class	Dosage
Alprazolam	Benzodiazepine	**Dog:** 0.02 – 0.1 mg/kg PO 30 to 60 minutes before visit **Cat:** 0.5 – 1 mg/CAT (NOT mg/kg) PO 1 hour before visit
Dexmedetomidine oromucosal gel	Alpha-2–adrenergic agonist	**Dog:** 125 micrograms/m^2 (NOT micrograms/kg) OTM 30 to 60 minutes before visit
Gabapentin	Anticonvulsant; anxiolytic; neuropathic pain analgesic	**Dog:** 50 mg/kg PO 2 hours before visit **Cat:** 50 – 200 mg/CAT (NOT mg/kg) PO 2 hours before visit
Trazodone	Serotonin (5-HT2A) antagonist/reuptake inhibitor	**Dog:** 5 – 7.5 mg/kg PO as needed 90 minutes before visit, up to 19.5 mg/kg daily **Cat:** 50 mg/CAT (NOT mg/kg) PO 60 to 90 minutes before visit

Chill Protocol



Drugs & Therapeutics > Behavior-Modifying Drugs

Chill Protocol to Manage Aggressive & Fearful Dogs

Renata S. Costa, DVM, MPhil, MANZCVS, GradDipEd, DACVAA, Midwestern University, Glendale, Arizona
Alicia Z. Karas, DVM, MS, DACVAA, Cummings School of Veterinary Medicine at Tufts University
Stephanie Borns-Weil, DVM, DACVB, Cummings School of Veterinary Medicine at Tufts University

ARTICLE | LAST UPDATED MAY 2019 | 5 MIN READ | PEER REVIEWED

Print/View PDF

- Gabapentin (20-25 mg/kg PO): evening before
- Gabapentin (20-25 mg/kg PO) and Melatonin PO: 1 to 2 hours prior
- Acepromazine (0.025-0.05 mg/kg OTM): 30 minutes prior

waves

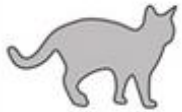
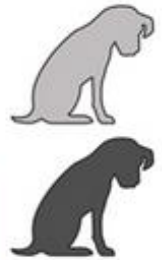
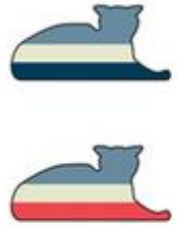
In-hospital

- Opioids (IM, IV, OTM)
- Acepromazine (IM, IV, OTM)
- Medetomidine (IM, IV, OTM)
- Alfaxalone (IM, IV)
- Ketamine (IM, IV, OTM)
- Benzodiazepines (IM, IV)

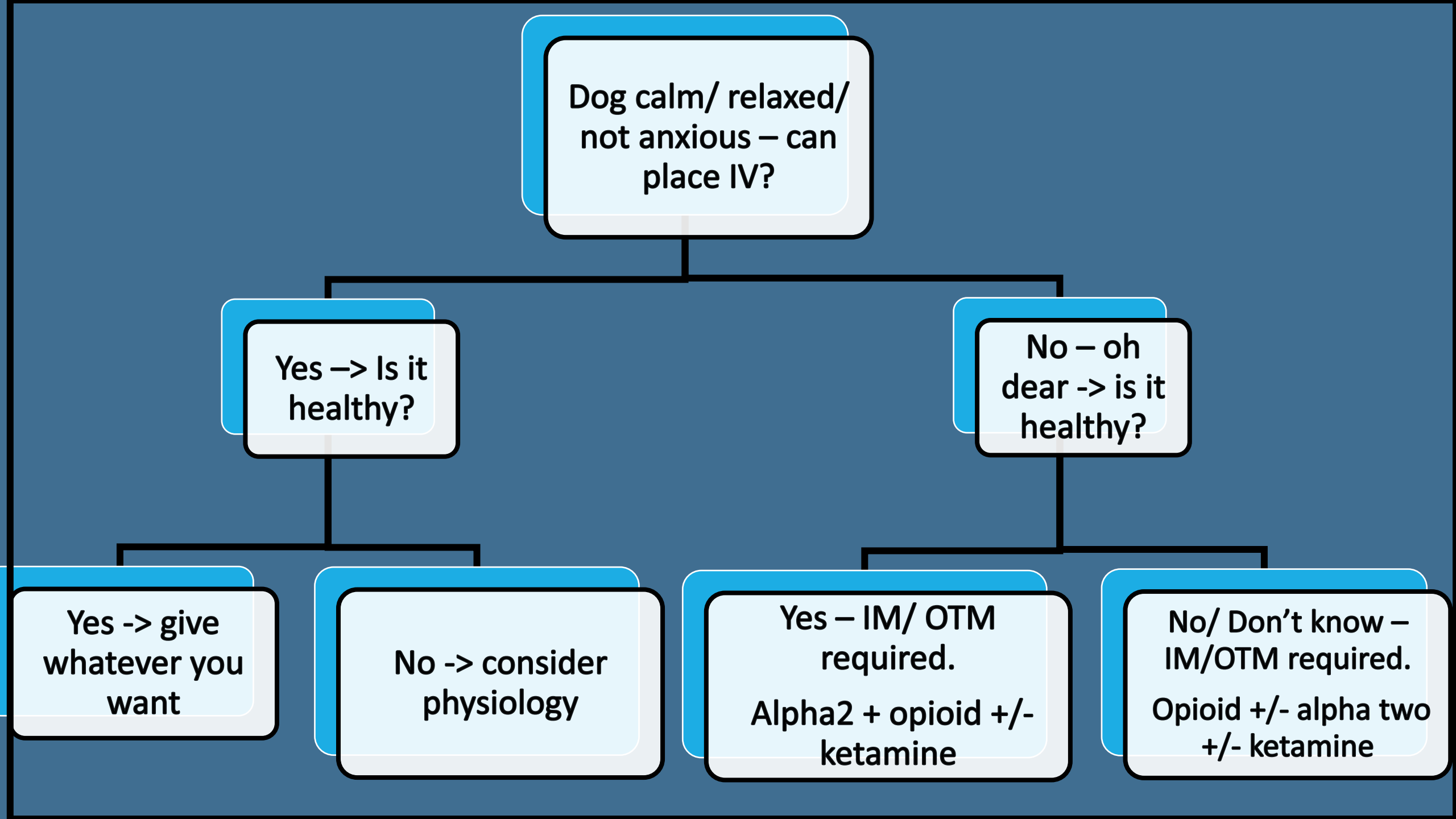
zeropainphilosophy · 5 min read

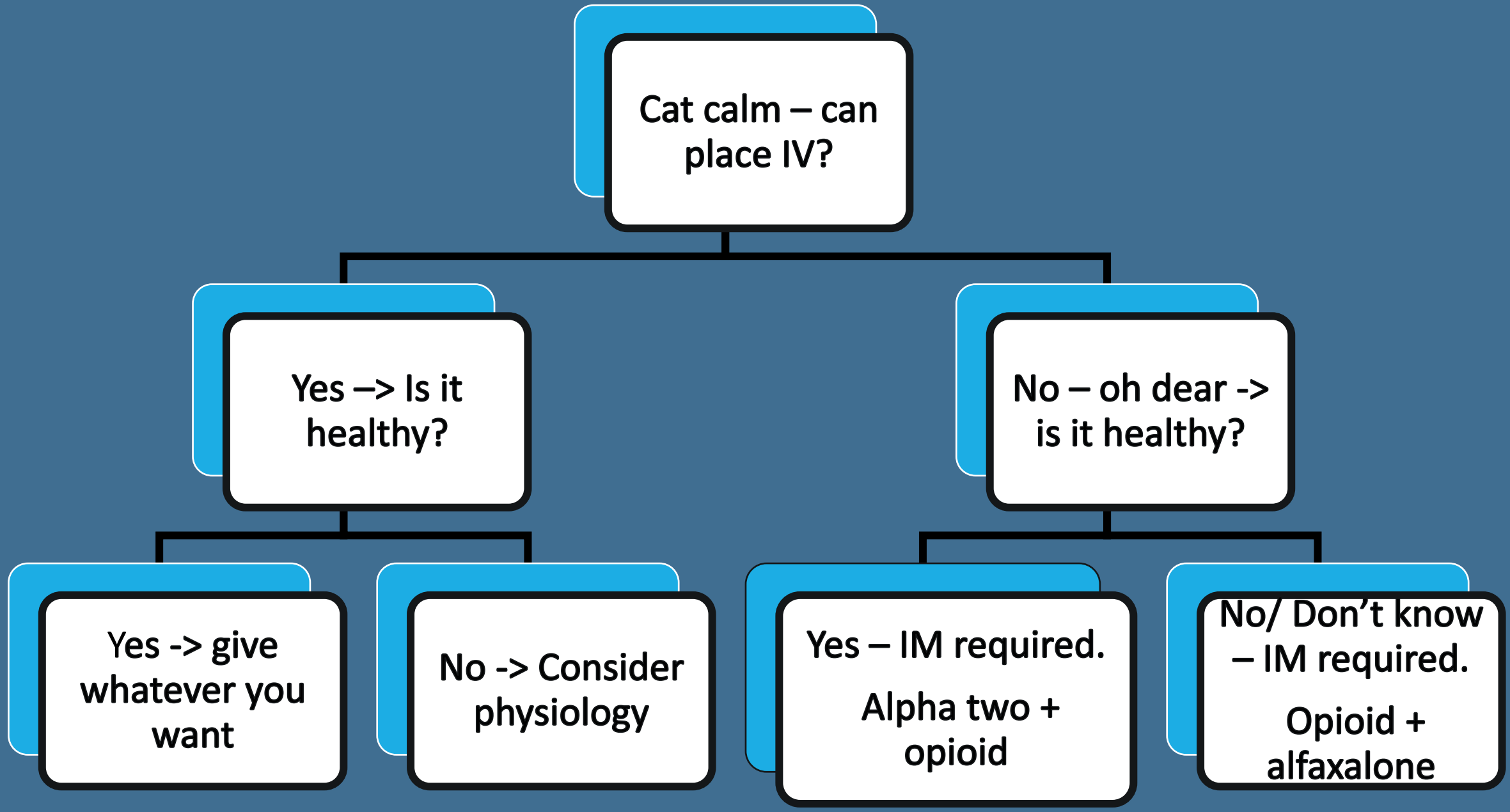
Sedation for the painful behaviour case - dogs & cats

Updated: Aug 11, 2024

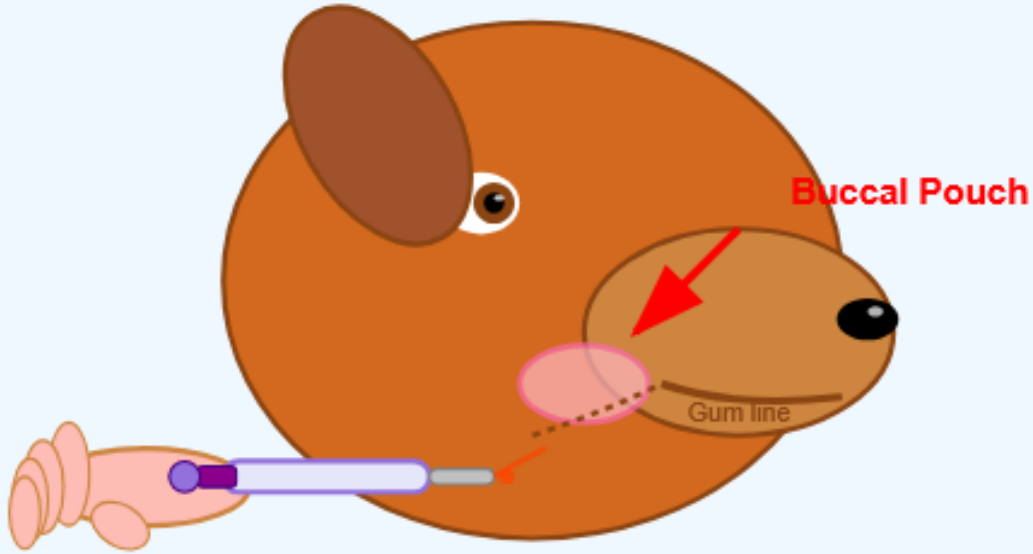
Desired Effect	Drug Options	Healthy		Examples	Compromised/Sick	
Low FAS	Gabapentin			50–150 mg/cat PO, 20–40 mg/kg PO (dog) 2–3 hr before visit		
	Trazodone			3–7.5 mg/kg PO (dog)		
	Alpha-2 agonist			Dexmedetomidine gel OTM. Use label dose for patient size**		
Light sedation	Opioid			Butorphanol 0.2–0.4 mg/kg IV/IM		
	Benzodiazepine			Midazolam 0.2 mg/kg, IV/IM		
Moderate sedation	Opioid			Butorphanol 0.4 mg/kg IM or Buprenorphine 0.02 mg/kg OTM (cat)		
	Tranquilizer			Acepromazine 0.01–0.03 mg/kg IM (dog)*, 0.025–0.1 mg/kg IM (cat)†		
	Benzodiazepine			Midazolam 0.2 mg/kg, IV/IM		
	Alpha-2 agonist			Dexmedetomidine 3–7 µg/kg IM (dog) or 3-10 µg/kg IM (cat) or 0.04 mg/kg OTM (cats)		
Heavy sedation	Opioid			Butorphanol 0.2–0.4 mg/kg IM		
	Benzodiazepine			Midazolam 0.2 mg/kg, IV/IM		
	Alpha-2 agonist			Dexmedetomidine 7–15 µg/kg IM (dog) or 10–20 µg/kg IM (cat)		
	Neurosteroid			Alfaxalone 1–2 mg/kg IM§		
	Dissociative			Ketamine 1–2 mg/kg IM		

http://www.aaha.org › uploads › 2020-anesthesia


Dog calm/ relaxed/ not anxious – can place IV?
Yes –> Is it healthy?
No – oh dear -> is it healthy?
Yes -> give whatever you want
No -> consider physiology
Yes – IM/ OTM required.
Alpha2 + opioid +/- ketamine
No/ Don't know – IM/OTM required.
Opioid +/- alpha two +/- ketamine


Cat calm – can place IV?
Yes –> Is it healthy?
No – oh dear -> is it healthy?
Yes -> give whatever you want
No -> Consider physiology
Yes – IM required.
Alpha two + opioid
No/ Don't know – IM required.
Opioid + alfaxalone

Oral Transmucosal (OTM)



Administration Technique:

1. Gently lift the dog's lip
2. Insert syringe into buccal pouch
3. Slowly dispense medication
4. Allow absorption through mucosa
5. Hold mouth closed briefly

Common OTM Medications:

- Dexmedetomidine (Sileo)
- Acepromazine
- Gabapentin gel
- Buprenorphine
- Alprazolam

Editorial Type: Pharmacology

Pharmacokinetics and pharmacodynamic effects of oral transmucosal and intravenous administration of dexmedetomidine in dogs

Brian T. Dent DVM, Turi K. Aarnes DVM, MS, Vincent A. Way

Randomized Controlled Trial > Vet Anaesth Analg. 2010 Sep;37(5):417-24.
doi: 10.1111/j.1467-2995.2010.00555.x.

Sedative and cardiorespiratory effects of dexmedetomidine and buprenorphine administered to cats via oral transmucosal or intramuscular routes

Luiz Cesar P Santos [1], John W Ludders, Hollis N Erb, Karen L Basher, Pati Kirch, Robin D Gleed

Affiliations + expand
PMID: 20712608 DOI: 10.1111/j.1467-2995.2010.00555.x

Abstract

Objective: To determine if buprenorphine plus dexmedetomidine administered via the oral transmucosal route produces sufficient sedation in cats so that students can insert intravenous catheters.

Study design: Prospective, randomized, blinded, clinical trial.

Animals: Eighty-seven shelter-owned female cats aged 4-48 months, weighing 1.1-4.9 kg.

Abstract

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Animals: Eighty-seven shelter-owned female cats aged 4-48 months, weighing 1.1-4.9 kg.

Methods: Cats were randomly allocated to two treatment groups based on route of drug administration: oral transmucosal (OTM), or intramuscular (IM). Buprenorphine (20 microg kg(-1)) plus dexmedetomidine (20 microg kg(-1)) were administered as pre-medicants via one of these two routes. Heart and respiratory rates, systolic arterial and 20 minutes after drug administration, heart and respiratory rates, systolic arterial and posture were measured and recorded. Twenty minutes after drug administration the plus each cat's response to clipper sound, clipping, and restraint were recorded; higher more sedation.

Results: There were no significant differences between the two groups prior to pre-medication. ...ent group heart rate was significantly lower 20 minutes after treatment, but it did ...y between the two groups. Twenty minutes after treatment, respiratory rate was ... OTM group, but did not differ significantly between the two groups. Systolic ... differ within or between the two groups at either time. Scores for ... ...hin both groups, and cats in the IM group had higher scores ... ...ment, cats in the IM group had higher scores for ... ...(IM) was necessary to facilitate catheterization ... ...groups, respectively, but this was not signifi...

Conclusions and clinical relevance: Admi... OTM route is easy to perform, but ...

View More +

...idine administered via the oral

...er, randomized

...ere collected from a

...ng/mL.

...bility for

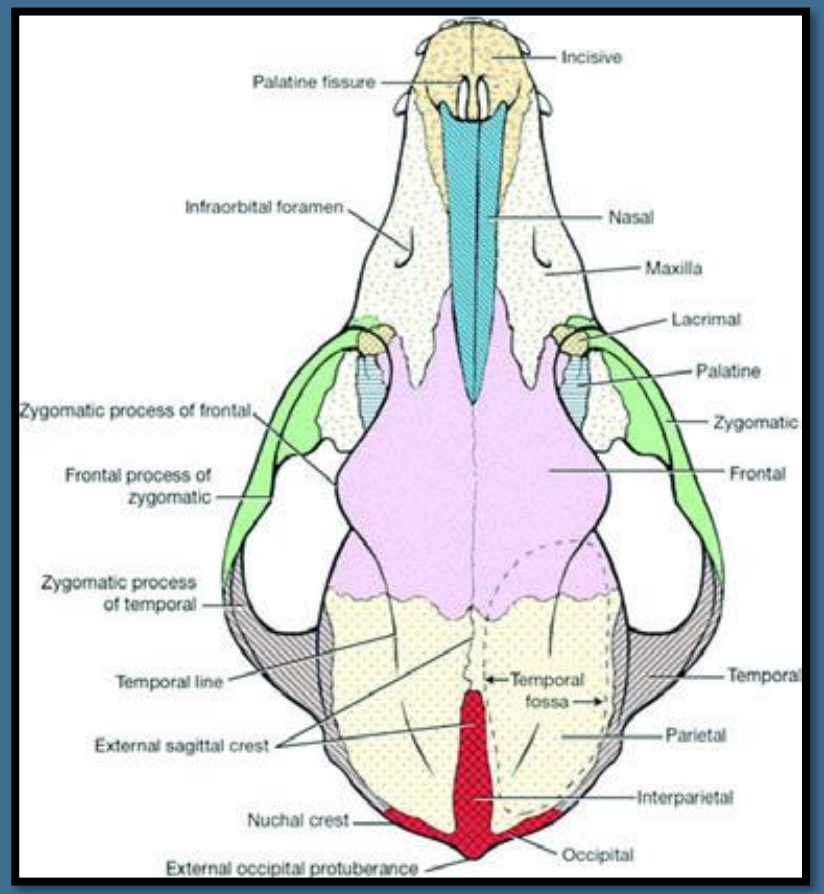
...ministration.

...duration of

aves

GV 20

- Governing vessel 20
- Acupuncture pressure point
- Crossing point of the Governing Vessel and Bladder Channels
- Used as a sedation point, for epilepsy, sleep disorders




JSAP
JOURNAL OF SMALL ANIMAL PRACTICE
BSAVA
BRITISH SMALL ANIMAL VETERINARY ASSOCIATION
ORIGINAL ARTICLE
Open Access
Comparison of sedation with dexmedetomidine/atipamezole administered subcutaneously at GV20 acupuncture point with usual routes of administration in dogs presented for orthopaedic radiographs
C. Leriquier, M. Freire, M. Llido, G. Beauchamp, X. Montasell, D. Gagnon, J. Benito
First published: 09 August 2023 | https://doi.org/10.1111/jsap.13668
Preliminary results were accepted as an e-poster communication at the 30th European College of
Epub 2016 Nov 14.
Effects of dexmedetomidine administered at acupuncture point GV20 compared to intramuscular route in dogs
A Pons [1], S Canfrán [2], J Benito [3], R Cediel-Algovia [2], I A Gómez de Segura [2]
Affiliations + expand
PMID: 27859317 DOI: 10.1111/jsap.12601
Abstract
Objective: To compare the sedative effects produced by dexmedetomidine in dogs,
either intramuscularly or into the Governing Vessel 20 acupuncture point.
Materials and methods: Six dogs were sedated with 125 µg/m2 dexmedetomidine
intramuscularly in the gluteal muscles or subcutaneously into the acupuncture point and in
order. Sedation and analgesia were assessed blindly before and after treatments at regular intervals
for 90 minutes or until the dogs fully recovered. Duration and quality of sedation were assessed with a
numerical sedation rating scale and a dynamic and interactive visual analogue scale. Analgesia was
The analgesic and sedative effects of GV20 pharmacopuncture with low-dose hydromorphone in healthy dogs undergoing ovariohysterectomy
Elizabeth M Scallan [1], Stacy L Eckman [1], Caleb D Coursey [1], Kristine C Ikels [1], Bradley T Simon [1,✉]
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PMCID: PMC8439329 PMID: 34602640
Abstract
study evaluates the analgesic efficacy of low-dose hydromorphone administered via
acupuncture at Governing Vessel 20 (GV20) for postoperative pain management
nature
scientific reports
articles
article
Article | Open access | Published: 05 February 2014
A systematic review and meta-analysis of Baihui (GV20)-based scalp acupuncture in experimental ischemic stroke
Wen-wen Wang, Cheng-long Xie, Lin Lu & Guo-qing Zheng
Scientific Reports 4, Article number: 3981 (2014) | Cite this article
17k Accesses | 21 Altmetric | Metrics
waves

Giving the sedation if anxious/aggressive

- Straight into consult room
- Owner can stay and hold for premed?
- Quiet room
- Lights off
- Owner can stay whilst becoming sedate
- Place catheter without moving the animal

Summary

- Consider patient
- Consider procedure
- Consider different drug options
- Consider different routes of administration