

PRESCRIBING FOR BEHAVIOR: HOW DO YOU DECIDE?



Christopher Pachel,
DVM, DACVB, CABC
Animal Behavior Clinic
Portland, Oregon

1

Three Levels:

1. Is patient/diagnosis likely to respond to medication?
2. Maintenance/daily vs. Situational/event?
3. Specific medication options

2

1 - Likely to respond to meds? (Yes or No)

- Diagnoses:
 - Fear/Anxiety
 - Impulsivity/Arousal
 - Aggression (motivated by anxiety, impulsivity, etc.)
 - Compulsive disorder
 - Urine marking
- In combination with:
 - Safety/management
 - Behavior modification

3

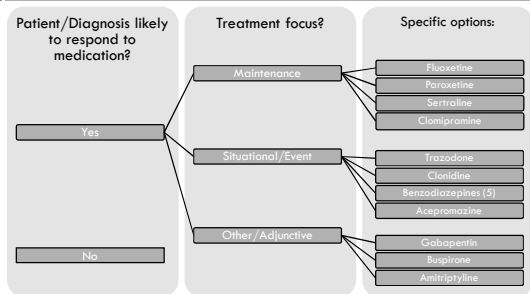
2 - Treatment focus: (Maintenance vs. Situational)

- Maintenance/daily
 - Triggers are frequent, unpredictable, unavoidable
 - Onset of action from 1-3 to 4-6 weeks
 - "Steady state" effect

- Situational/event
 - Triggers are predictable, infrequent
 - Adjunctive support
 - Onset of action from 15 min to 1-2 hours
 - Rapid adjustment of doses within trial period
 - Short duration of action (potential for "scalped" effect)

4

3 – Specific medication options



5

Considerations

- Medications FDA approved for use in dogs (NONE in cats)
 - Clomicalm® (clomipramine) – Separation anxiety
 - Reconcile® (fluoxetine) – Separation anxiety
 - Anipryl® (selegiline) – CDS and PDH
 - Sileo® (dexmedetomidine) – Noise aversion



6

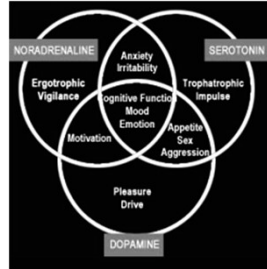
Neurotransmitters / Intended Impact

Amino acids:

- Glutamate: excitatory
- GABA: inhibitory

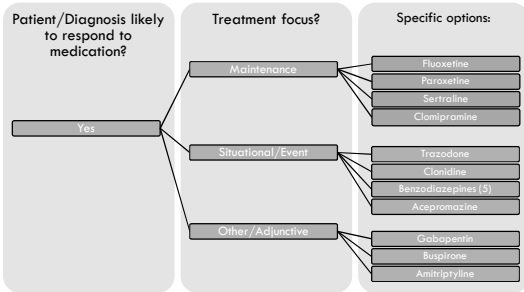
Biogenic amines:

- Serotonin (5HT)
- Dopamine (DA)
- Norepinephrine (NE)



7

3a – Favorite maintenance medications



8

Fluoxetine

- Generic/inexpensive
- Lots of anecdotal experience within the profession
- Impulsivity/arousal as focus for treatment, also for fear/anxiety
- Available research (“dominance aggression”, urine marking, separation anxiety – as Reconcile)
- Negative impact on appetite
 - Pro – resource guarding, competitive aggression, food related arousal
 - Con – anorexia, client perception

9

Paroxetine

- Generic/inexpensive
- Generally less of an impact on appetite than fluoxetine (similar indications)
- More of an anticholinergic profile than fluoxetine
 - Helpful for patients with chronic/situational loose bowels, urinary incontinence
 - Potential for dry mouth and/or constipation

10

Sertraline

- Not quite as inexpensive, but generally affordable (are you aware of www.goodrx.com?)
- Smallest tablet size is 25mg (may require compounding for cats and small dogs)
- Social anxiety, less impact on arousal/impulsivity unless at higher end of dose range
- Less likely to cause side effects (sedation, anorexia, constipation, etc.)

11

Clomipramine / Clomicalm

- Impact on both serotonin and norepinephrine
- My medication of choice when both impulsivity/arousal and anxiety impact is desired
- Significantly more expensive
 - Generic/compounded, Clomicalm
- Anticholinergic side effect profile
 - Sedation not uncommon especially as getting started with treatment

12

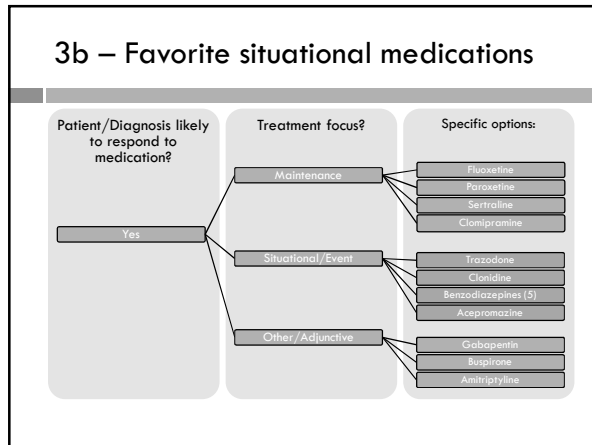
SSRI/TCA

Dosages (oral administration):

	Canine	Feline
Fluoxetine (Prozac®)	1-2 mg/kg q24hr	0.5-1.0 mg/kg q24hr
Paroxetine (Paxil®)	1-2 mg/kg q24hr <i>(q12hr instead?)</i>	0.5-1.0 mg/kg q24hr
Sertraline (Zoloft®)	1-3 mg/kg q24hr <i>(q12hr instead?)</i>	0.5 mg/kg q24hr
Clomipramine (Clomicalm®)	1-3 mg/kg q12hr	0.3-0.5 mg/kg q24hr

13

3b – Favorite situational medications



14

Trazodone

- 5HT₂ α antagonist/reuptake inhibitor
- PRN usage most common, short term maintenance
- Most likely to cause sedation without overt ataxia
- Essentially no cardiovascular impact
- Indications for at home, in hospital, post-surgical...

	Canine	Feline
Trazodone	3-7mg/kg PRN to q8hr	12.5-50mg/cat PRN to q12hr

15

Clonidine

- Alpha 2 agonist
- Inhibits NE release (flight/flight reactions)
- Helpful for patients with pattern of “wind-up”
- Potential for bradycardia/hypotension
- Reversible

	Canine	Feline
Clonidine	0.01-0.05mg/kg PRN to q8hr	0.005 mg/kg to 0.01 mg/kg PO q12hr

16

Benzodiazepines

- Specific options:
 - Diazepam – sedation more likely as part of clinical effect
 - Alprazolam – fast acting, short duration
 - Lorazepam – may be safer for geriatric/pediatric, feline patients
 - Clonazepam – may achieve something resembling steady state with repeat dosing, longer duration effect
 - Clorazepate – also has longer duration of action
- Caution re: disinhibition, paradoxical excitation, polyphagia

17

Benzodiazepines

Dosages (oral administration):

	Canine	Feline
Diazepam (Valium®)	0.5-2.0 mg/kg q4-6hr	0.2-0.5 mg kg q8-12h
Alprazolam (Xanax®)	0.02-0.1 mg/kg q8-12hr	0.125-0.25mg <i>per cat</i> q12hr
Lorazepam (Ativan®)	0.1-0.2 mg/kg q8-12hr	0.125-0.25mg <i>per cat</i> q12hr
Clonazepam (Klonopin®)	0.1-1.0 mg/kg q8-12hr	0.1-0.2 mg/kg q12-24hr
Clorazepate (Tranxene®)	0.55-2.2 mg/kg q8-24hr	0.2-0.5 mg/kg q 12-24hr

18

Acepromazine

- Uncommon use as sole agent in my practice
- Sedation without significant anxiolysis most common
- Significant ataxia, variable effect and duration
- Potential for increasing noise sensitivity

	Canine	Feline
Acepromazine	0.5-1.1 mg/kg q8-24hr (PRN)	0.5-1.1 mg/kg PRN

19

Sileo® (newest available option)

- Transmucosal dexmedetomidine
- Labeled for canine noise aversion
- Dose 30-60 minute prior to anticipated noise event, or at first sign of anxiety or fear
- Duration 2-3 hours
- Up to 5 doses
- At least 2 hours between doses
- Overdose potential (client error)

The following table provides the acceptable dosage for each weight range. Each dog can be given up to 5 doses per day, with 2 hours between doses. Do not give to cats.

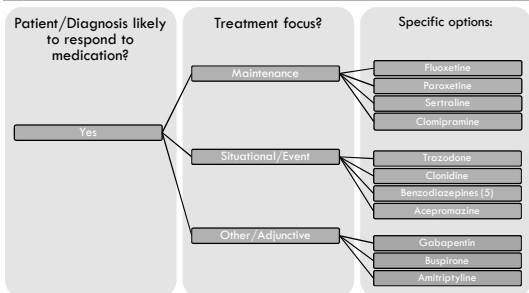
Weight (kg)	Number of doses
1.0-1.5	1
1.5-2.5	1
2.5-5.0	1
5.0-10.0	1
10.0-15.0	1
15.0-20.0	1
20.0-25.0	1
25.0-30.0	1
30.0-35.0	1
35.0-40.0	1
40.0-45.0	1
45.0-50.0	1
50.0-55.0	1
55.0-60.0	1
60.0-65.0	1
65.0-70.0	1
70.0-75.0	1
75.0-80.0	1
80.0-85.0	1
85.0-90.0	1
90.0-95.0	1
95.0-100.0	1
100.0-105.0	1
105.0-110.0	1
110.0-115.0	1
115.0-120.0	1
120.0-125.0	1
125.0-130.0	1
130.0-135.0	1
135.0-140.0	1
140.0-145.0	1
145.0-150.0	1
150.0-155.0	1
155.0-160.0	1
160.0-165.0	1
165.0-170.0	1
170.0-175.0	1
175.0-180.0	1
180.0-185.0	1
185.0-190.0	1
190.0-195.0	1
195.0-200.0	1
200.0-205.0	1
205.0-210.0	1
210.0-215.0	1
215.0-220.0	1
220.0-225.0	1
225.0-230.0	1
230.0-235.0	1
235.0-240.0	1
240.0-245.0	1
245.0-250.0	1
250.0-255.0	1
255.0-260.0	1
260.0-265.0	1
265.0-270.0	1
270.0-275.0	1
275.0-280.0	1
280.0-285.0	1
285.0-290.0	1
290.0-295.0	1
295.0-300.0	1
300.0-305.0	1
305.0-310.0	1
310.0-315.0	1
315.0-320.0	1
320.0-325.0	1
325.0-330.0	1
330.0-335.0	1
335.0-340.0	1
340.0-345.0	1
345.0-350.0	1
350.0-355.0	1
355.0-360.0	1
360.0-365.0	1
365.0-370.0	1
370.0-375.0	1
375.0-380.0	1
380.0-385.0	1
385.0-390.0	1
390.0-395.0	1
395.0-400.0	1
400.0-405.0	1
405.0-410.0	1
410.0-415.0	1
415.0-420.0	1
420.0-425.0	1
425.0-430.0	1
430.0-435.0	1
435.0-440.0	1
440.0-445.0	1
445.0-450.0	1
450.0-455.0	1
455.0-460.0	1
460.0-465.0	1
465.0-470.0	1
470.0-475.0	1
475.0-480.0	1
480.0-485.0	1
485.0-490.0	1
490.0-495.0	1
495.0-500.0	1

If the dose is more than 0.05 mL, divide the dose between both sides of the mouth.



20

3c – Favorite adjunctive medications



21

Gabapentin

- Effects on neuropathic pain, generalized anxiety, seizure threshold
- Wide dose range, variable dose and dosing frequency potential
- May be helpful adjunct for “touch sensitive” or noise phobia patients
- Helpful when treating anxiety in combination with pain, neuro patterns

	Canine	Feline
Gabapentin	10-30mg/kg q8-12hr	3-10mg/kg q8-12hr

22

Buspirone

- Impacts 5HT system differently than SSRI options
- Onset typically within 1-3 weeks
- Potential for “pushy” or “assertive” response
- Non-sedating
- Can be used in combination with other meds

	Canine	Feline
Buspirone (Buspar®)	1.0-2.0 mg/kg q8-24hr	0.5-1.0 mg/kg q8-24hr

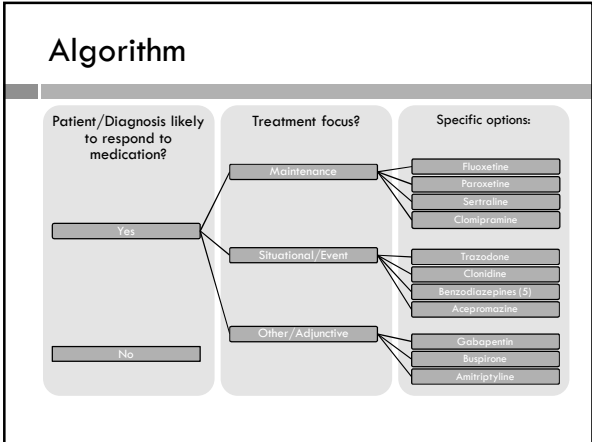
23

Amitriptyline

- Not generally as stand-alone med in my practice
- Potential impact on chronic pain
- Selective for norepinephrine
- Can be used in combination with SSRIs (some risk)
- Dose dependent sedation is common

	Canine	Feline
Amitriptyline (Elavil®)	1-4 mg/kg q12hr	0.5-1.0 mg/kg q12-24h

24



25


Thank you!

Christopher Pachet, DVM, DACVB



animalbehavior
CLINIC

O: 503.236.7833 F: 503.252.6481 www.animalbehaviorclinic.net
809 SE Powell Boulevard, Portland, OR 97202



26