Old Cat Souls: Aging, pain and assuring comfort

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"It's not just what you feel but also how it makes you feel"

Nociception
Pain perception – emotion and memory
UNIQUELY PAINFUL

NOCICEPTIVE PAIN
- Peripheral neural receptors + noxious stimuli
  - Surgical incisions
  - Trauma
  - Heat
  - Cold

INFLAMMATORY PAIN
- Immune response to injury
  - Bradykinin
  - Cytokines
  - Prostaglandins
  - Neurotropic growth factors
  - Substance P
PATHOLOGIC PAIN
- Maladaptive
  - Hyperalgesia
  - Allodynia
  - Expansion
  - Protraction

Preemptive analgesia
- Before surgical incision
  - Multimodal
  - Pain free emergence

Preventive analgesia
- Extends into convalescence
  - Multimodal
  - Adjust duration
  - Intensity

Reduces
- Peripheral and Central sensitization
  - Hyperalgesia
  - Allodynia

PLAN
- ANTICIPATE
- TREAT
- EVALUATE
- RETURN

MULTIMODAL

Pharma
- Local
- Regional
- Opioid
- Nsaid
- α-2
- Ketamine
- Gabapentin
- More

Non-pharma
- External heat
- Weight mgmt
- Exercise
- Acupuncture
- Th. Laser
- Nursing care
- Gentle handling
- Home
- Caregiver
Postoperative pain control in cats: clinical trials with pre-emptive lidocaine epidural co-administered with morphine or methadone
- 24 cats
- Lidocaine alone
- Lidocaine + methadone
- Lidocaine + morphine
- All only lidocaine
- Required rescue w/i 2 hrs.

**PLAN**
- Patient specific
  - Know who
- Your repertoire
  - Know what and how
DRUG INTERACTIONS

- TCAs – clomipramine, amitriptyline
- SSRIs – sertraline, paroxetine, fluoxetine
- MAOIs – selegiline, amitraz
- Herbals – St. John’s wort, ginseng

- Serotonin syndrome – salivation, diarrhea to myclonus and hyperthermia
- Fentanyl, meperidine, tramadol, pentazocine
- NOT buprenorphine

GOOD TO KNOW

- Fentanyl patch
  - Highly variable plasma concentration
  - Steady state 6-12 hours
  - 3-5 days
  - 20 hours after removal to decline
  - Liability issues on discharge

- Methadone
  - Methadone
  - 4-6 hours of analgesia
  - Opioid+ NMDA
  - Small studies
  - No side effects
  - Little sedation
  - Similar uptake to dogs

ANTICIPATE

- Prevent
  - Will it hurt?
- Know normal
- Train observers
- Score

TREAT BEFORE PAIN

- IV Catheter topical
- Opioid + sedative – pre-op
  - Midazolam/Hydromorphone
- Opioid + α-2 +/- ketamine
  - Butorphanol/Dexdomitor
- Lower doses of each reduce potential SE
- Local/regional
- Nsaid – robenicoxib
MORE PAIN ANTICIPATED

- Cold compression
- α-2 adrenergic agonist
- Ketamine CRI
- Lidocaine CRI
- Epidural

BLOCKED!

**TYPE**
- Local
- Regional – Wright’s
- NSAID
- Opiate
- Anxiolytic/Antispasmodic

**PHARMA**
- Bupivicaine
- Sterile lidocaine
- Onsior, meloxicam
- Hydromorphine, Methadone
- Buprenorphine, Simbadol X 3
- Fentanyl patch
- Midazolam, Acepromazine, prazosin, diazepam

NON-PHARMA THERAPY

- Quiet
- Dark
- Hiding place
- Reduced handling

CHRONIC FIC

Buprenorphine
- 15ug/kg

Gabapentin
- 50-300mg/cat Q12-24

NSAIDs? Hydration/kidneys

Cerenia
- 1mg/Kg Q24

Combination therapy better

Ref:
Chronic pelvic pain of bladder origin: a focus on interstitial cystitis. 
MAROPITANT/CERENIA

- NK-1 Receptor Antagonist
- Inhibits Substance-P
- Anesthetic sparing in dogs
- Mediator of pain & inflammation
- Visceral pain in mice, guinea, pigs rabbits
- Visceral & somatic pain in dogs
- ½ 16 mg tablet Q 24 hours

EVALUATE/RETURN

- Glasgow Short Form Composite Measure Pain
  - www.newmetrica.com/cmps
- CSU Feline Acute Pain Score
  - www.csuanimalcancercenter.org/assets/files
- UNESP-Botucatu Multidimensional Composite Pain Scale
  - www.animalpain.com.br
- Differentiate sedation from analgesia

Systematic review of the behavioral assessment of pain in cats

- Isabella Merola and Daniel S Mills

- Acute v. chronic undefined
- Few causes examined
- No adequate validated tool
- Sensory not affective
- Facial expression
- Behavior
- Context
- Expert and owner
- UNESP Botucatu validated

UNESP-Botucatu Pain Scale
CATS DON’T LIMP

- 40-92% DJD
- Stiff, bilateral
- Less active
- Less jumping
- Resist handling
- FPMI
- Pain trial
- Ns aids - IBW
- Gentle handling

Readable, Reliable, Valid

- Criterion Validation Testing of Clinical Metrology Instruments for Measuring Degenerative Joint Disease Associated Mobility Impairment in Cats PLOS 2015
- A novel approach to the detection of clinically relevant pain relief in cats with degenerative joint disease associated pain JVIM 2013
- Feline Musculoskeletal Pain Index (FMPI): Responsiveness and Criterion Validity Testing. JVIM 2013
- Reliability and discriminatory testing of a client-based metrology instrument, Feline Musculoskeletal Pain Index – FMPI, for the evaluation of degenerative joint disease associated pain in cats TVJ 2013
- Item generation and design testing of a questionnaire to assess degenerative joint disease-associated pain in cats. AJVR 2010
THERAPY

- Buprenorphine - Simbadol 0.24mg/kg 3 days, OTM 0.02-0.03 mg/kg
- Robenacoxib - 1-2mg/kg Q 3 days
- Gabapentin – 50-300 mg/cat Q12 in compounded liquid with Stevia
  - start 50 mg at night, increase by 50 mg increments to effective dose
- EPA/DHA – 140mg/kg & 170 mg/kg
- Acupuncture, environment, warmth
Simbadol 0.18-0.24mg/kg 3 days

- FDA Approved
- Controlled field studies
- Efficacy & Safety
- Much higher concentration
- Extends duration to 24 hr
- Not to be dispensed
- Schedule III opioid
- Euphoria, dysphoria

Long-term use of gabapentin for musculoskeletal disease and trauma in three cats

Nina D Lorenz, Ethne J Comerford, and Isabelle Iff

- Severe head trauma
- Marked chronic lameness
- Signs of pain identified
- 5, 3, 1 month continuous
- 3, 2, 12 month intermittent

ROBENACOXIB

- Clinical safety of robenacoxib in feline osteoarthritis: results of a randomized, blinded, placebo-controlled clinical trial JFMS 6/2015
- COX-2 NSAID
- Short blood half-life
- Long tissue half-life
- Minimize renal, GI, other side effects
- Quality of Life

ADJUNCTIVE

- Acupuncture
- Therapeutic laser
- Massage
- Heat
- Physical rehab.
- Diet
- Dietary supplements
OBESITY AND PAIN
- EPA/DHA
- Glucosamine
- Chondroitin
- Green lipped mussel
- PSGAG
- L-Carnitine

ENVIRONMENT

Senior patterns
Follow up

- Pharmacokinetic and pharmacodynamic evaluation of high doses of buprenorphine delivered via high-concentration formulations in cats JFMS May 2015
- Clinical safety of robenacoxib in feline osteoarthritis: results of a randomized, blinded, placebo-controlled clinical trial JFMS June 2015
- Feline degenerative joint disease: a genomic and proteomic approach JFMS January 2013
- 2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats JFMS March 2015
- Systematic review of the behavioural assessment of pain in cats Merola and Daniel S Mills JFMS February 2016
- UNESP-Botucatu Pain Scale www.animalpain.com.br
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