

## Analgesia

## Do animals experience pain?

- Pain
  - conscious perception of a noxious stimulus
- One argument
  - Animals have less developed cortex
  - Noxious stimulus present
  - Not perceived to same degree
  - No/ little analgesia administered

## Evidence that they do perceive pain

- They will self administer analgesics
- Also
  - We cannot prove they do not perceive pain
  - We justify animal use in pain models to develop novel analgesics

## Different approach

- Not “When should I administer analgesia?”
- Instead “Are there any specific reasons why analgesics would interfere with the procedure?”
- If a painful procedure is carried out with no analgesia, must justify
- But - repeated doses doses of analgesics have side effects (a “cost”), with no benefit to the animal if it is not experiencing pain

## Careful thought needed

- Be objective
- Administer analgesics based on
  - recognition of normal behaviour for the species & individual
  - recognition of pain behaviours for the species
  - palpate the affected area
  - make measurements eg bodyweight, food intake

## Timing of administration

- Before a painful stimulus occurs
  - Assess anaesthetics you will use in terms of the degree of analgesia they provide
  - Supplement analgesia as necessary before/during anaesthesia
- Continue to provide analgesia post-operatively as necessary

## Analgesic drugs

- NSAIDs
- Local analgesics
- Opioids



## NSAIDs

- Carprofen can be used in most species (including cats)
- Fewer side effects than older NSAIDs
- Give before anaesthesia, lasts up to 24 hours
- For rodents and other animals with small bodyweight needs dilution for accurate dosing. The large animal formulation is suitable for diluting. Small animal formulation is not. Check the bottle before use as packaging very similar.



## Local analgesics

- Examples are lignocaine and bupivacaine
- Topical application
- Infiltrate in wound area using needle and syringe
- Regional nerve blocks
  - farm animal species
- Look up the toxic dose for the drug you are using in the species you are working with
- Under used as part of a general anaesthetic protocol



## Opioids

- Example of classical opioid is fentanyl
  - full agonist at the  $\mu$  receptor
  - Used with other drugs in anaesthetic regimens to provide analgesia component of the triad
- Partial agonists commonly used as analgesics
  - Eg buprenorphine
  - Provide analgesia with less respiratory depression
  - Post-operatively, may be used to partially reverse full agonists



## Self-study

- Course book Chapter 8: Management of pain, suffering, distress and lasting harm