Simple solutions to complex problems

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Thank you

GHDT/TAWS and Heather
WVS and Luke
Colleagues at the Donkey Sanctuary
Derek Knottenbelt, Georgie Hollis
My Family and Mum!
Empirical solutions

• What is empirical? - *Observation, Experience*

• Scientific experimental method - *null hypotheses and manipulation of the trial to assess statistical significance.*

• Empirical research can be used to drive experimental studies and new discoveries
A Balanced Viewpoint?

Conventional

Human

NSAID deaths 2-3000 per year
Side effects - NHS £251 million

Equine

Metformin - EMS
Pub med – 3 studies
Dose rates based on 4 horses!

“Traditional”

Evidence of toxicity
10-20,000 deaths/yr SAfrica

Evidence of increased mortality in cancer sufferers taking TAM (Norway)
Empirical treatments may *not* be best
What is current best practice?
Consider evidence, science, humanity, welfare
Empirical treatments may be the best!
New evidence may support old remedies
Dehydration
Oral rehydration fluid

- 1 litre of clean water
- 10g salt (2 teaspoons)
- 20-50g sugar (6 teaspoons granulated)
- ½ small spoon baking soda (Na HCO3)
- Plus ¼ small spoon low salt (KCl) if over 2 days TX
How much fluid?

Weight of horse $\times$ percent dehydration eg

$300\text{kg} \times 10\% = 30\text{L}$

Plus

Maintenance of 40-60ml/kg/day

18L
Contraindications

- Intestinal ileus / gastric reflux
- Severe dehydration - poor circulation and absorption of fluids

Alternatives

Intravenous fluids
Recipes available for “home made” preparations in Saunders Equine Formulary

Require catheters, giving sets and expert monitoring
Colic – impaction

- Colon impaction – studies in EVJ 2004, 2008, USA and UK.
- Better resolution using oral (enteral) fluids versus intravenous.
- Regime 0.5-1g/kg MgS04 in 3litres water
- Then rehydration fluid hourly (10ml/kg).
- Faster resolution, fewer systemic electrolyte changes, no thrombophlebitis
Impaction treatments
Analgesia?
Analgesia?

- Little information in equine traditional medicine
- Probably pain is under recognised
- Suggestions - cooling / warmth
  - marijuana alcohol infusions
  - chilli
- Acupuncture
- If using NSAIDs suggest $\frac{1}{2}$ dose then rehydrate
Diarrhoea

"I've got the trots."
Local remedies
“Digestive Aids”

- Ginger, Jaggery
- Buttermilk
- Castor Oil
- Soda water
- Asafoetida
Nutritional support

At the Donkey Sanctuary this has become a “traditional treatment”, for donkeys with poor appetite and to reverse hyperlipemia. “Ready brek” is 1.5MJ/100g

<table>
<thead>
<tr>
<th>Weight kg</th>
<th>Daily MJ</th>
<th>Wt ready brek</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>12-14</td>
<td>1kg</td>
</tr>
<tr>
<td>175</td>
<td>14-17</td>
<td>1.3kg</td>
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Wound management

- Harness sores
- Burns
- Trauma
UK choices

Saline flush
Surgical gloves
Pevidine
Intrasite
Flamazine
Wound adhesive
Dermisol
Fucidin/Fuciderm
Antiinflammatory gel
Primary dressings

- Silver
- Charcoal
- Collagen/genticin
- Rondopad
- Haemostasis
- Absorbant
Secondary layers
Costs in UK

- Acticoat- silver dressing £48.58 for 5
- Activate- charcoal dressing £16.28 for 5
- Collatamp-genticin/collagen £154.23 for 1
- Activon Tulle –honey £19.30 for 1
- Activon as a cream £31.40/tube
Challenges in the field

Available
Affordable
Acceptable
Wounds have a patient attached to them!

- Nutritional status, anaemia, deficiencies
- Underlying immunosuppression
- Co-existing diseases
Wound assessment

Infection, Contamination
Trauma, Location
Movement

Phases
Vascular
Inflammatory
Repair
Maturation
Wound cleaning

- *Do not use what you would want on yourself.*
- Saline- 1 L boiled water, 2 teaspoon salt
- Flush 10-15psi
- For necrotic wounds:
- Dakin’s solution- sodium hypochlorite in water, unscented bleach 0.125-0.5%, 12-50mls per litre. Protect viable tissue with vaseline
Sugar pastes

- *Sugar paste recipe*

- Caster sugar- 1200g
- Icing sugar 1800g
- Hydrogen peroxide 19ml
- Polyethylene glycol 1416mls (miralax-laxative)

- Stable 6 months in air tight container.
Sugarydyne

- Mix granulated sugar and pevidine solution until thick paste consistency
- Used to dry infected frog tissue
- Used after hoof abscesses

Bandage on, and change every 48 hours
Honey

Nutritional resource for the bee

80% sugar, 17% water

Bee derived enzymes, esp glucose oxidase

Hydrogen peroxide produced by enzyme reaction

Acid pH 3

Plant derived factors- phyto chemicals
Dorsal hock wound, honey +7 days
Wound +11, + 25 days
Mechanism of action

- Antibacterial
- Debridement
- Reduce odour
- Stimulates growth
- Anti-inflammatory - reduce pain and oedema
- Moist wound healing
Practical tips

• Ordinary honey will do
• Do not use solid/set honey with wax etc
• Should cover with dressing
• Pasteurisation probably unnecessary
• Can mix 50/50 with vaseline for superficial wounds
• Can dilute 50/50 in saline for antimicrobial flushing solution.
Honey....

Amount-20-30mls for a 10x 10cm wound.

Can fill cavities and depressions with honey.

Seem more comfortable to change than many dressings

Very suitable for burns.
Aloe Vera

Active ingredient - Acemann

Immunostimulatory

Enhances phagocytosis

Stimulates granulation tissue
Aloe Vera -
Maggots

Greenbottle larvae - Lucilia sericata

Gamma irradiated - sterile

Use 100-200 and repeat every 3 days
Final Thoughts

• Field of ethnoveterinary medicine and research is wide

• *Be critical but receptive to evidence:*
  • Echinacea-efficacious
  • Some herbal wormers- useless
  • Camrosa- harmful on sarcoids
Thank you for listening!