antimicrobial use in equine practice survey 2013 preliminary results

FEEVA medicines WG

giorgio ricardi
• FEEVA WG group on medicines formed in Copenhagen, FEEVA GA Nov 2011
• WG met at BEVA 2012 and AVEF 2012
• Questionaire presented and discussed in Vienna, FEEVA GA Nov 2012
• Survey launched in Arezzo, FEEVA Equine Meeting of the Year Feb 2013
• Survey online closed on Apr 30 2013
Purpose of FEEVA survey

• To complement the 2012 FVE-HMA survey
• To collect additional information about antimicrobial use by equine practitioners and attitudes to AM resistance
• Key questions:
  - perception of equine practitioners of AM resistance issues
  - how often are AM used?
  - are AM used responsibly?
• General questions
• Clinical scenario based questions
General questions

- Country
- Number of years in veterinary practice
- Perception of importance of AM resistance and multiresistant organisms
- Factors affecting choice of antimicrobials
- Broader range of AM needed?
- Proportion of AM prescriptions for metaphylaxis?
Clinical scenarios

• Cough in adult horse with fever and lower respiratory signs suggestive of brochopneumonia
• Diarrhea in adult horse with fever and other clinical signs suggestive of colitis
• 2-3wk old foal with diarrhea and fever
• Painful swelling and lameness distal limb in an adult horse
• Endometritis in a broodmare
Clinical scenario Q1

Caseload nr cases during last year
- 0
- 1
- 2-5
- 6-10
- >10
Clinical scenario Q2-3

• How often do you treat cases like this with AM?
• How often would you carry out culture and sensitivity testing in a case like this?

Never
Rarely (1/10)
Sometimes (2-5/10)
Often 6-9/10
Always
Clinical scenario Q4

- If you treat with AM, please give your usual first choice and also second or third choice AM
Clinical scenario Q5

How long do you usually treat cases like this for
- 1-3 days
- 4-5 days
- 6-10 days
- <10 days

Treatment dose and frequency
- As specified in product data sheet
- At higher dose and/or frequency than data sheet
- At lower dose and/or frequency than data sheet
Results

- 435 respondents
- 22 countries
  - Germany 111, Italy 67, France 49, Sweden 48
  - Switzerland 30, Denmark 20, Finland 19, Austria 17
- Experience in practice:
  - median 16 yrs
  - range 1-50 yrs
What is your perception of importance of AM resistance in equine practice in particular multidrug resistant organisms

- 149/435 (34.2%)
  Not important, I rarely encounter resistant bacteria in my practice
- 89 (20.4%)
  It is a practical issue, I have experience of treatment failure because of resistant bacteria
- 189 (43.4%)
  I have experience of treatment failure and I thinks a broader issue affecting animal and human health
Rank five most important factors that influence your choice of antimicrobials

MOST important (ranked first or second)

• Clinical or professional experience 371
• Bacterial culture and sensitivity results 322
• Guidance/codes of practice-legal official restriction of use 268
• Route or ease of administration 260
• Sustainable use of antibiotics in veterinary medicine 260
Rank five most important factors that influence your choice of antimicrobials

LEAST important

- Owner or trainer demand
- Marketing offers
- Price and/or profit margin to practice
Would a broader range of available antimicrobials be beneficial to your patients?

- Yes 168/435 (38.6%)
- No 251/435 (57.7%)
- Not sure/No answer 16 (3.7%)

Antimicrobial that were identified as lacking

- Penicillin (intravenous formulation)
- Gentamicin
- Enrofloxacin
- Oral formulations
What proportion of AM treatment you prescribe are for early treatment of in-contact animals with no clinical signs?

- 0% 270/435 (62%)
- >25% 135/435 (31%)
- 25-50% 23/435 (5.3%)
- 50-75% 3/435 (0.7%)
- no answer 4/435
Combined data
How often treated with AM

- Bronchopneumonia
- Diarrhea
- Sick foal
- Cellulitis
- Endometritis

- Never
- Sometimes
- Often
Combined data
How often sampled

- Bronchopneumonia
- Diarrhea
- Sick foal
- Cellulitis
- Endometritis

Legend:
- Never
- Sometimes
- Often
Combined data
First choice antimicrobial

- Coughing
- Diarrhea
- Sick foal
- Cellulitis
- Endometritis

Graph showing the use of different antimicrobials for various conditions.
Endometritis
<table>
<thead>
<tr>
<th>Indication</th>
<th>Percentage mentioned:</th>
<th>Antibiotics (CIA) versus other</th>
<th>Top Antibiotics used for treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin diseases incl. wounds &amp; abscesses</td>
<td>31% (25%)</td>
<td>Non CIA’s: 96%, CIA’s: 4%</td>
<td>Penicillins (46%), Potentiated sulphonamides (25%), Aminoglycosides (18%), Tetrac (5%)</td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>27%</td>
<td>Non CIA’s: 82%, CIA’s: 18%</td>
<td>Penicillins (30%), Aminoglycosides (10%), Tetrac (7%), Pot sulphonamides (29%), 3th &amp; 4th generation Cephalosporine (13%), (Fluoro)Quinolone (4%)</td>
</tr>
<tr>
<td>Locomotion disorders</td>
<td>10% (5%)</td>
<td>Non CIA’s: 91%, CIA’s: 9%</td>
<td>Penicillins (42%), Aminoglycosides (31%), Potentiated sulphonamides (10%), Tetracyclines (10%), 3th &amp; 4th generation Cephalosporine (7%)</td>
</tr>
<tr>
<td>Incl arthritis lymphangitis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peri-operative</td>
<td>9%</td>
<td>Non CIA’s: 94%, CIA’s: 6%</td>
<td>Aminoglycosides (42%), Penicillins (39%), Potentiated sulphonamides (11%), 3th &amp; 4th generation Cephalosporine (4%), (Fluoro)Quinolone (2%)</td>
</tr>
<tr>
<td>Infections (PUO and others) Incl sepsis and infection</td>
<td>8%</td>
<td>Non CIA’s: 83%, CIA’s: 17%</td>
<td>Penicillins (28%), Aminoglycosides (23%), Tetracyclines (16%), Pot sulphonamides (13%), 3th &amp; 4th gen Ceph (13%), (Fluoro)Quinolone (4%)</td>
</tr>
<tr>
<td>Others</td>
<td>15%</td>
<td>Non CIA’s: 78%, CIA’s: 22%</td>
<td>Penicillins (25%), Aminoglycosides (19%), 3th &amp; 4th generation Cephalosporine (15%), (Fluoro)Quinolone (7%), Chloramphenicol (6%), Metronidazole (6%)</td>
</tr>
</tbody>
</table>

Table 8: Antibiotics used for top 5 indications to prescribe antibiotics in horses
<table>
<thead>
<tr>
<th>Antibiotic Classes</th>
<th>Total all countries</th>
<th>BE</th>
<th>FR</th>
<th>DE</th>
<th>ES</th>
<th>SW</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Important Antibiotic Classes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd and 4th generation cephalosporins</td>
<td>9%</td>
<td>15%</td>
<td>9%</td>
<td>9%</td>
<td>14%</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Macrolides</td>
<td>1%</td>
<td>3%</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>(Fluoro)Quinolone</td>
<td>3%</td>
<td>5%</td>
<td>4%</td>
<td>4%</td>
<td>2%</td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>Other Antibiotic Classes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aminoglycoside</td>
<td>19%</td>
<td>13%</td>
<td>20%</td>
<td>26%</td>
<td>27%</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Penicillins: amoxycillin, ampicilline</td>
<td>37%</td>
<td>32%</td>
<td>42%</td>
<td>45%</td>
<td>32%</td>
<td></td>
<td>61%</td>
</tr>
<tr>
<td>Potentiated sulphonamides</td>
<td>20%</td>
<td>25%</td>
<td>16%</td>
<td>12%</td>
<td>15%</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Tetracyclines</td>
<td>6%</td>
<td>4%</td>
<td>6%</td>
<td>1%</td>
<td>5%</td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td>Others</td>
<td>5%</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td></td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 4: Overview of antibiotics commonly prescribed in horses per country (only countries are included with more than 50 replies on this question)
Preliminary conclusions

- Penicillin, TMS still most frequently used AM.
- Use of these AM classes could be further encouraged if more formulations were available on market.
- Judicious use of CIAbx (FVE/HMA survey).
- Metaphylaxis seldom used (0% and >25% of prescriptions in 94% (62% and 31% respectively) of respondents.

- Responsible use of AM
- Difference within countries – importance of single market.
- Diffusion of data and education/guidelines important
• Limitations of the survey
type of respondents
number/geographical representativity

• Analysis of data is ongoing, final results will be presented at EMY 2014
Acknowldegements

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• FEEVA delegates
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