ANTIMICROBIALS CASE STUDY- Pet Rabbit 1 year old pet doe rabbit

History: Rabbit has been sneezing off and on for 3 weeks (summer, hot, humid). The owner noticed a discharge from the nose for a few days. The rabbit has a decreased appetite and is less active.

ANTIMICROBIALS CASE STUDY- Pet Rabbit List the problems you have identified: fever anorexia sneezing conjunctivitis mucopurulent discharge fur on paws wet, matted

2

1

ANTIMICROBIALS CASE STUDY- Pet Rabbit Diagnostic Samples? Bacterial culture? conjunctiva? nasal? How to collect a sample? Culturette (sterile swab) Gram stain?

ANTIMICROBIALS CASE STUDY- Pet Rabbit Treatment Suspect Pasteurella multocida (Gm neg) (snuffles): penicillin enrofloxacin chloramphenicol doxycycline trimethoprim/sulpha erythromycin aminoglycosides

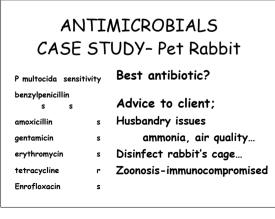
ANTIMICROBIALS CASE STUDY- Pet Rabbit Route of Administration?

Problems with choice?

Contraindications with choice Superinfections: macrolides/lincosamides oral penicillins

5

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ANTIMICROBIALS CASE STUDY- Fergus 7 yr old spayed Great Dane List the problems you can identify: Fever Anorexia

Reluctant to move Hyperdynamic shock Swollen right elbow

Leukocytosis, mild

ANTIMICROBIALS

CASE STUDY- Fergus

7 yr old spayed Great Dane Comment on the referring vet's therapy.

expensive in large dog potential for developing resistance other antibiotic options would be effective

8

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ANTIMICROBIALS CASE STUDY- Fergus

7 yr old spayed Great Dane What 3 samples would you take?

> Blood culture urine culture (cystocentesis) joint fluid

| ANTIMICROBIALS CASE STUDY- Fergus | | | |
|--|----|--|--|
| What antibiotic(s) would you choose while waiting for your results? Choose bacteriocidal, parenteral antibiotics | | | |
| while waiting for results | | | |
| | 10 | | |
| ANTIMICROBIALS CASE STUDY- Fergus Based on the sensitivity s aureus Sensitivity results, what would you Ampicillin r choose to treat Fergus? | | | |

| Ampicinin | L. | choose to theat tergus. |
|------------------|----|-------------------------|
| Co- trimazine | s | |
| | 2 | |
| Chloramphenicol | S | How long should the |
| Gentamicin | S | treatment be continued? |
| Enrofloxacin | S | n cannen De connidea. |
| Cephalexin | S | |
| Co-amoxiclav | S | Why was enrofloxacin |
| | | • |
| | | ineffective? |
| | | |
| | | |

| ANTIMICROBIALS |
|--|
| CASE STUDY- TB Colt |
| List the problems you have identified: |
| fever |
| anorexia |
| cough |
| dyspnoea |
| Purulent nasal discharge |
| Swelling of lymph nodes, draining LN |

ANTIMICROBIALS CASE STUDY- TB Colt

What further physical examinations? check temperature of all yearlings examine unaffected yearlings <u>BUT</u> avoid cross contamination from obviously sick yearlings

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ANTIMICROBIALS CASE STUDY- TB Colt

What clinical pathology and bacteriology tests will you perform? Aspirate lymph node, culture & sensitivity Gram stain of aspirate CBC?

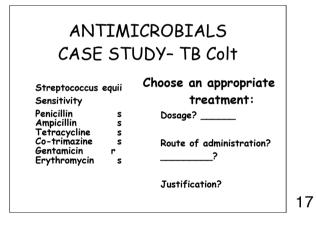
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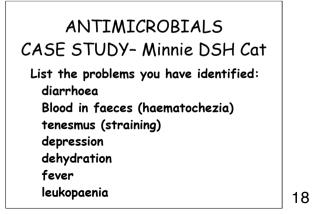
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ANTIMICROBIALS CASE STUDY- TB Colt What treatment will you give while waiting for results? Isolate affected yearlings Use separate halters, buckets, etc between affected and nonaffected yearlings Drain abscesses, if appropriate Antibiotics - ____? usually work

ANTIMICROBIALS CASE STUDY- TB Colt

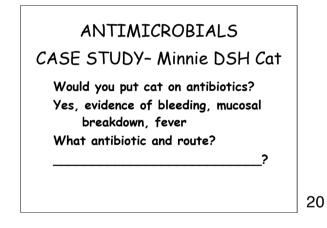
How will you manage the unaffected yearlings? Isolate from affected yearlings Check temperatures daily Monitor for clinical signs





ANTIMICROBIALS CASE STUDY- Minnie DSH Cat What type of diarrhoea? Enterocolitis (large and small bowel) Three potential differentials? Salmonellosis Campylobacterosis Panleukopaenia Others: yersiniosis or clostridial

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ANTIMICROBIALS CASE STUDY- Minnie DSH Cat Adverse effects of antibiotics on GIT? Clavulox (amoxycillin & clavulanic) ?

may predispose to Salmonella

overgrowth

Diarrhoea

Superinfections

| ANTIMICROBIALS CASE STUDY- Minnie DSH Cat | |
|---|----|
| Pharmacokinetic property with an Adverse effect on normal flora: | |
| Enterohepatic cycling – e.g. tetracyclines | |
| | |
| | 22 |

ANTIMICROBIALS CASE STUDY- Minnie DSH Cat

What antibiotic spectrum increases the adverse effects of antibiotics on GIT?

anaerobic Confirmation of bacterial enterocolitis? Culture faeces for enteric pathogens

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ANTIMICROBIALS CASE STUDY- Minnie DSH Cat Bacteria Salmonella spp cultured

Treatment? Controversial - severity warrants treatment Antimicrobial Treatment? chloramphenicol? enrofloxacin? trimethoprim/sulpha?

ANTIMICROBIALS CASE STUDY - CHARLIE Kings Charles Cavalier Spaniel

10 year-old entire female Based on the history what problems can you identify?

poor appetite (anorexia) misalliance (recently in heat) polyuria, polydipsia (PU/PD) discharge from vulva

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ANTIMICROBIALS CASE STUDY - CHARLIE

After clinical examination what additional problems have you identified? panting abdominal distension, difficult to palpate purulent discharge from vulva heart rate of 160 bpm Diagnosis: suspected pyometra

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ANTIMICROBIALS CASE STUDY - CHARLIE

What clinical pathology tests would you do?

Routine CBC

What would you treat Charlie with while waiting for the results?

Treat with a bacteriocidal, broad spectrum antibiotic keeping in mind E. coli may be the causative agent.

ANTIMICROBIALS CASE STUDY - CHARLIE What do the clinical pathology results indicate? Note the total and differential white blood cell counts. Increase in total WBCs Left shift with TP:F ratio indicating inflammation Any problems? Anaemia Dehydration What other tests might be indicated? Radiographs or Ultrasound to aid diagnosis

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ANTIMICROBIALS CASE STUDY - CHARLIE

What are your treatment options?

Surgical management and antibiotics Medical management, antibiotics, +/- prostaglandins

What is the likelihood of success with conservative treatment (e.g. medical management)? Not very good

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ANTIMICROBIALS CASE STUDY - CHARLIE

Treatment Plan for Charlie:

Surgery plus antibiotic treatment - IM, SC or IV initially:

Medical antibiotic treatment:

ANTIMICROBIALS CASE STUDY - FRIESIAN COW

Friesan Cow #267 - 4 yo high yielding cow History of difficult calving and down with calving paralysis for 10 days. Hot swollen quarter.

Given that you agree with the farmer about mastitis, what would you do next? Culture the affected quarter aseptically

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ANTIMICROBIALS

CASE STUDY - FRIESIAN COW What immediate treatment would you give? Intramammary products:

Parenteral?

Do you think that it is necessary to administer parenteral antibiotics? Why or why not?

Yes, the type of mastitis (watery with white flecks) may indicate E. coli and intramammary infusions may not diffuse into the guarter evenly.

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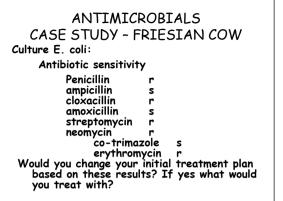
ANTIMICROBIALS CASE STUDY - FRIESIAN COW

What factors determine a drug's distribution from the blood into the milk?

Lipid solubility

Degree of ionisation

Extent of protein binding in milk and plasma



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ANTIMICROBIALS CASE STUDY - FRIESIAN COW

Would you change your initial treatment plan?

What other important factors do you and the farmer need to consider?

Milk withholding times for intramammary and parenteral therapy.

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ANTIMICROBIALS CASE STUDY - Kaiser

German Shepherd

6 year-old entire male

Based on the history what problems can you identify?

Pain, pyrexia initially

Hunched, resented palpation of hindleg,

abdomen and manipulation of the neck

Blood results:
 neutrophilia, inflammatory change

ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

What do you think of the previous treatment?

• Changing antibiotic families, treatment time too short

Trimethoprim/sulphas not effective for

gram positive bacteria producing beta lactamase

* Using steroids in the face of a slight neutrophilia

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ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

List the problems you can identify.

- Reluctant to stand and hunched while standing
- Resents hindleg extension and lumbar pressure
- Takes short strides when walking

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ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

What clinical pathology tests might you consider?

Clinical tests

- Bloods CBC and chemistry panel
- Blood culture (Staph aureus, Strept or B canis)
- Urine culture

ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

What other diagnostic aids will you use?

 Radiograph of mid thoracic and lumbar vertebrae

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ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

What will you treat Kaiser with while you wait for the results? (Hint: Based on a tentative Dx of discospondylitis with a likelihood of gram positive bacteria choose an appropriate antibiotic)

• choice of antimicrobial that will distribute to the bone and be effective against gram positives like Staphs.

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ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

What would you expect to see with the other diagnostic aid? Radiographs:

+ Lysis of the bone in the lumbar region

 new bone growth in the lumbar region
 Different from 1st visit due to length of time to develop

ANTIMICROBIALS CASE STUDY - KAISER German Shepherd - 6 yo entire male

Based on evidence of discospondylitis from radiographs plan your treatment: Antibiotic? Dose? Course of treatment? Need a long course of antibiotic treatment. Might consider parenteral therapy for 5 days and then oral therapy for 4-6 weeks. See: http://www.walthamusa.com/articles/wf82cor.pdf

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ANTIMICROBIALS CASE STUDY - KAISER

German Shepherd - 6 yo entire male

Based on evidence of discospondylitis from radiographs plan your treatment:

1st Choice Antibiotic?

Other options?

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ANTIMICROBIALS CASE STUDY - DRIBBLES

Labrador Retriever

8 year-old entire female Based on the history what problems can you identify?

- chronic skin infections
 Staphylococcus intermedius
- intractable ear infection, otitis externa
- depression
- possible exercise intolerance (not moving around)

ANTIMICROBIALS CASE STUDY - DRIBBLES

List the problems you can identify

- chronic skin infections Staphylococcus ٠ intermedius
- intractable ear infection, otitis externa ٠
- depression ٠
- possible exercise intolerance (not moving ٠ around)

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ANTIMICROBIALS CASE STUDY - DRIBBLES

Defend or criticise your boss's approach to therapy:

- Possibility of primary endocrine disorder initially
- initial therapy should have been bacteriocidal

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ANTIMICROBIALS CASE STUDY - DRIBBLES

List the additional problems you can identify now

- otitis externa (green smelly purulent discharge)
 purulent chronic skin infection
- cold to touch
- partial alopecia
- obese
- bradycardia

ANTIMICROBIALS CASE STUDY - DRIBBLES

Should you do anything diagnostically or therapeutically about the hormonal disorder at this time and why?

- Yes, need to correct for treatment to be successful
- Diagnostic tests: T4, ± TRH or TSH stimulation test, CBC

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ANTIMICROBIALS CASE STUDY - DRIBBLES Should you do anything differently about the skin and ear infections at this time? If so what and why?

• Treat them as separate and distinct problems

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ANTIMICROBIALS CASE STUDY - DRIBBLES

Indicate your course of therapy if the owner has no money and cannot afford diagnostic tests at all, i.e. what is your recommended empirical therapy?

- Ancillary treatment for ears-drain and keep clean
- Suspect Pseudomonas by colour and smell

• Skin:

- Topical treatment of ears:
- Need to correct endocrine problem