Benha University
Fac Vet Medicine
Animal Med Dept
Vet. Internal Medicine
General Medicine Exam
Vet. pharmaceuticals and Biological preparation program

Time allowed: ٢ hrs.
Date: 28-8-2016
Total marks: 50 marks

جامعة بنها
كلية الطب البيطرى
قسم طب الحيوان
الامراض الباطنة
برنامج الأدوية البيطرية والمستحضرات البيولوجية - تأجيل

==========

Answer model

Please answer all questions

1- Describe the clinical signs of the following:

a. Pneumonia in calves (6 marks)

- Fever
- Nasal discharge
- Cyanosis of MM
- Coughing
- Abnormal lung sounds (exaggerated vesicular sound)
- Anorexia
- Depression

b. Traumatic pericarditis in cattle (6 marks)

- Engorged MM capillaries
- Distentiona and pulsation of JV
- Oedema of dewlap
- Grunting sound
- Anorexia
- Fever
- Abnormal auscultation sounds of the cardiac area (frictional sound, splashing sound, muffled sound
-

2- Outline the causes and pathogenesis of the following:

a. Impaction in cattle (6 marks)

Causes :

(A) Ingestion of large amount of whole or ground grains before proper period of adjustification which may be predisposed by:

1- Fresh harvested grains are more toxic.

2- Animals break into field or ripegrain corn may engorge themselves more than those intable feeding.

3- Sudden change from higher grains to wheat and barely.

The normal dose of grains was 5 kg per cow daily and after accustoming may reach up to 20 hg

The lethal dose rate of grain rations are:

- for sheep 60 – 80 gm per kg b. wt
- for cattle 20 gm per kg b. wt

(B) Ingestion of large amount of feeds containing non – protein nitrogenous material (urea).

The urea percent must not exceed 3% of the amount of the ration feed to animal.

Pathogenesis:

1- High carbohydrates in ration will be acid upon by the gram positive cool (mainly Strept bovis) to ferment them into high amount of lactic acid.

If the amount of lactic acid in rumen exceed 3% it will produce high osmotic pressure which consequently withdraw fluid to the rumen.

The withdrawal of fluids results in a case of tissue dehydration, blood haemoconcentration, and anuria.

The increased amount of lactic acid with the subsequent lowering of the pH will destroy the normal microflora so that the final product of normal fermentation (the volatile fatty acids) is ceased. The change of the PH of the rumen had a direct effect on the rumen motility with the resultant verying fegrees of ruminal stasis. PH of 4.5-5 cause incomplete ruminal stasis, while pH lower than 4.5 results in complete ruminal stasis

b. Urolithiasis in steers (6 marks)

(A) Diet:

a- Silicate calculi formation:

I- Diets containing high levels of silica e.g some grasses high as 60% cause silicate urolithiasis.

2- Cattle raised on such silica-rich diets, the reticulorumen fluid contains "silicon dioxide", which is convented to "silicis acid".

3- Silicic is absorbed from GII and excreted in urine until concentration rises to values of supersaturation (especially when the water intake is low).

4- High concentrations of silicic acid from large molecular weight micelles Of silica (Si-0-Si) via siloxane bonds.

5- Silica micelles coalesce and precipitate with "urine protion" to form Silicate nidus; which continue to grow in the presence or continues supersaturation of the urine.

6- Silicate calculi contain 3-4 mucoprotein-level protein are enhanced by:

- Feeding high concentrate diets.
- Inadequate dietary level of vitamin-A

b- Struvite calculi formation: (magnesium ammonium phosphates)

I- Struvite calculi mainly affect ruminants in feedlots,this especially because, they raised mainly on cereal-based rations.

2- Cereal-based ration are:

- High in phosphorous.
- Increasing the cereal to roughage ratio of the diet.

3- Increased dietary "phosphorus" intake and concentration of urine phosphates to the extent that crystallization occur.

N.B.

In one study diets high in phosphate (0.8%) resulted in calculi in 75% of the animals examined, whereas diets containing 0.3% phosphate prevent struvite calculi.

- Struvite calculi also contain 3-4% mucoprotein.

- Increased dietary "magnesium" intake has recently been experimentally to causes uroliths in growing calves. Addition of calcium but not phosphorus, to the diet appeared to protect against urolithiasis caused by high dietary magnesium.

(B) Water intake:

1- Reduced water intake is thought to result in increase concentration of "crystalloids" in urine.

2- Percent of dietary salt ingested influences water intake.

(C) Urine-PH:

1- Siliceous calculi is unaffected by change in PH "over" the normal range. Moreover, acidification of urine by addition of ammonium chloride did not reduced the concentration of silicic acid-in the urine, nor did it reduce the weight of calculi produced on diet-rich silica.

2- Sturvite calculi reduced by acidification of urine by favor dissolution of struvite cation of urine.

3- Plan the line of diagnosis for the following:

a. Pyelonephritis (6 marks)

Etiology:

1- The specific cause of C.B.P. is corynebacterium renale (possibly 4 serotypes, type 1 appears to be most pathogenic, and all 4 types are capable of stimulating production of complement-fixing antibodies which give cross-recations with mycobacterium johnei)

2- Corynebacterium pyogenes, carynebacterium pseudatuber¬culosis coryne equli,E. coli and Staph. aureus and Streptococci and unidentified diphthroid bacilli are sometimes found in urinary tract of cattle affected with pyelonepheritis either alone or associated with cor. renale (mixed infection).

N.B.:

The disease Ist reported in U.S. (Boyd 198I), :

Epidemiology:¬

1- Clinical cases of disease appear sporadically.

2- The disease highly fatal, unless the appropriate treatment instituted early.

3- The disease of economic importance in cattle - economic losses from the disease due to deaths of the affected animals.

4- The disease essentially a bovine disease, but sheep are occasionally affected.

5- Cows much more susceptible than bulls and cow before maturity (unbred heifers) are seldom affected (not infrequent).

6- Increase clinical cases incidence of the disease in colder season of year i.e winter (relation of cold to kidney diseases is found in nephritis in man).lbecause of the persistence of pyelonephritis as an endemic affection in high-producing (heavily fed) dairy herd, it has been suggested that a high protein diet may increase susceptibility to the disease (predispose to an attack).

N.B:

C.B.P. is regarded therefore one of the stress-related diseases (stress of cold or uncomfortable weather; stress of high production and advanced pregnancy and stress of heavy feeding).

7- The short wide and often traumatized urethra of cows, probably offers a predisposition to infection by allowing the enterance of the organism into the U.B.

8-C.renale has been cultured from the vulva, vagina vestibule and penile sheath prepuce and urethra of bulls) of apparently normal cattle. (The bacteria that have been isolated produced pyelonephritis in lab. albino mice by I.V route).

9- The vulva is thought to be the portal of entry in the cow. This view supported by the very firm adhesion of C. renale to epithelium cells of bovine vulva and typical lesions can be established experimentally in some animals by the introduction of the organism into U.B. (Wester 1927) producing the disease experimentally by introduction of sterile sand and pure culture of C. renale into U.B. followed by massage).

10 - Evidence reveled that, the disease transmitted by contact, as grooming animals with contaminated brushes vulvar contact with urine-soiled bedding, tail switching and the use of non-sterilized catheters or obstetric instruments can induce the disease.

11- Venereal transmission seems to be a likely means of spread in animals bred by natural service (venereally spreed). This supported by cessation of cases when A.I. is used.

12- Clinically affected or clinically normal "carrier" cows are probably the principal source of infection.

13- C.B.P. may develop secondary to bacterial infection of lower urinary tract.

N. B:

Spread of pyelonepheritis from "embolic nepheritis" of haematological origin such as pseudomans aeruginosa septicemia in cattle.

Pathogenesis:

1- Infection of urinary tract should be present.

2 - Stagnation of urine which permit the multiplication must be present.

3- Infection progress up the urinary tract.

4- Stagnation of urine may occur as a result of:

a) Blockage of ureters by the inflammatory swelling or depris

or by b) Obstructive urolithiasis. or by c) Pressure from - uterus in pregnant cows.

5- infection ascends the ureters not always bilaterally and invades the renal pelvis.

6- Infection extended to the renal medulla and then may extend to renal cortex.

7- Toxaemia and fever may result if the renal involvement is bilateral obstruction of urinary outflow, occurs and death ¬follows.

b. stomatitis in calves (6 marks)

1-Primary causes:

A) Physical causes:

1- Sharp owns and spines of plants.

2- Fault use or vigorous use of stomach tube.

3- Fault in molar teeth such as maloccluded teeth or sometimes sharpness of the teeth.

4- Fracture of the mandible due to strong trauma from outside.

B) infectious causes:

1- Bacterial causes:

a) Necrotic stomatitis due to fusobactrium necrophorus.

b) Actinomycosis (lumpy jaw) and secondary infection.

c) Actionbacillosis (wooden tongue) due the actionbacillus lignieresi

2- Viral causes:

a) FMD

b) Cattle plague

C) Bovine virus diarrhea mucosal disease complex (BVD-MD).

d) Blue tongue in sheep.

symptoms:

A) General symptoms:

1- Varying degrees of anorexia iray be partial or complete loss of appetite)¬

2- Drooling of saliva which may contain pus or shreds of epithelial cells. It may be few in amount causing froth at the commisures.

3- Painful mastication and smacking of the lips.

4- There may be fetid odour in the mouth due to bacterial invasion.

5- Enlargement of submaxillary lymph nodes.

¬6- May be fever in systemic cases.

7- local lesions:

A. Lacerated lesions on lips and tongue indicated traumatic cause.

B. Proliferative stomatitis: Small (less than 1 cm diameter), swollen, congested lesion on the tongue, buccal mucosa and palates which undergo ulceration in 3 days. It is usually occur in viral infection.

C. Papular stomatitis: Raised reddish papules (0.5-I cm diameter) found on buccal mucosa and muzzle. It also may occur an the nostrils. It is another form of viral lesions and usually associated with other systemic reactions.

D. Pinpointed ulcers follows the papules occurs usually in cattle plague, and bovine virus diarrhoea mucosal disease, The ulcers coalesce together to form large denuded ulcers. These lesions are found allover the mouth cavity, pharynx and oesophagus as well as the abdominal segments of GI tract. There is no vesicle formation, temperature may reach 40-4I°C..

E. Vesicle formation which ruptured to leave ulcers. The vesicle filled with clear fluid. The temperature reachs 40-41°C but suddenly subside after the rupture of the vesicles.

F. Necrotic stomatitis: The lesions found on the mucosa of cheek. Also may be found on pharynx and larynx. The cheeks looked as swollen cheeked appearance.

G. Wooden tongue of actinobacillosis: Abscess-like lesion in the tongue and may be the lymph node.

4-

a. Prescribe the treatment protocol for tymapny in cattle (4 marks)

A- Hygienic treatment :

The hygienic treatment is directed to help the animal get rid of the gas in the rumen by:

1- Stand the animal with his forelimbs in a level higher than hind limbs.

2- Put a stick in the mouth to keep it open.

3- Put a wood on the tongue to enhance eructation.

4- Rumen massage to help contractility.

5- To avoid recurrency of this case you must add 5kg hasy/head daily to the ration while the legumes must be less than 50%.

B- Medicated treatment:

The medicated treatment should be directed to change the frothy tympany to free gas tympany then get rid of this gas:

1- To reduce the stability (lowering the surface tension) by mechanical purgative as vegetable or mineral oil or we can supplement this treatment with 30 cm of turpentine oil, kerosein formaline as antifoam agents.

2- Can use antibiotics to suppress the microbial fermentative actions, after changing the frothy tympany into simple gas tympany use stomach tube to get raid of gases.

3-Antihistaminie should be administrate as AVIL 2-3 ampoules I.M. or I.V.

C-Surgical interference :

i) Rumonatomy.

ii) Trocar and canula

b. Clinical case: You are called to examine a buffalo with sudden stop of feeding and distention of the left abdomen. Severe salivation was observed. Plan your line of diagnosis, differential diagnosis and treatment?. (10 marks)

Oesophageal obstruction is the most suspected disease

Differential diagnosis with:

Primary tympany

Traumatic pericarditis

Traumatic pericarditis