Unit : Ketosis

Lesson : 2

Types of Ketosis, Etiology of Bovine & Ovine Ketosis, Epidemiology of Bovine & Ovine Ketosis

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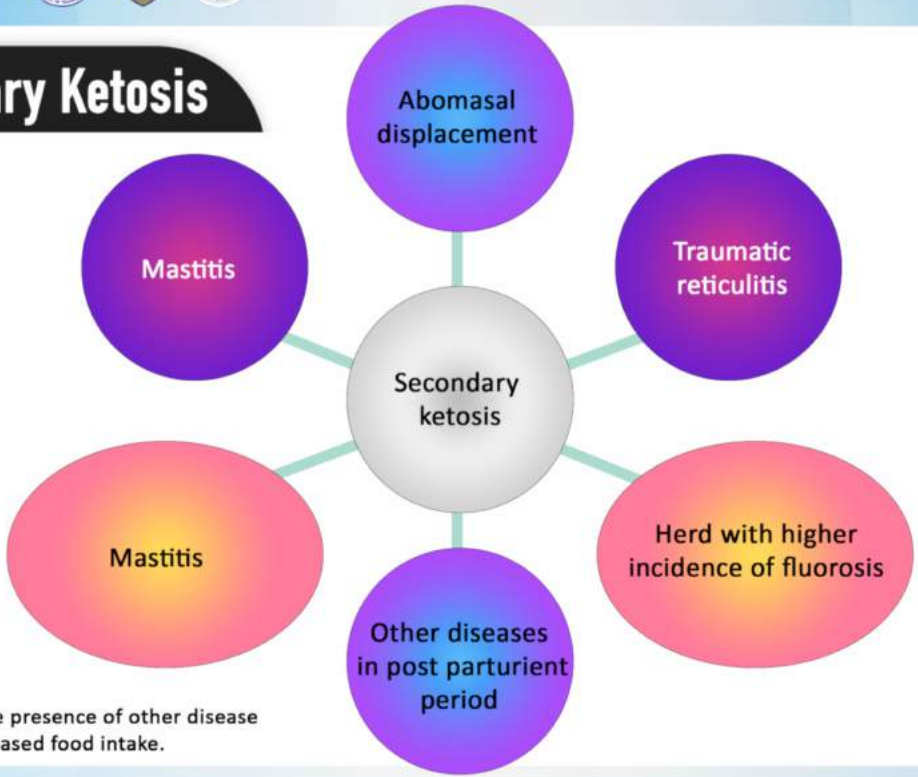
Primary Ketosis (Production Ketosis)

- Ketosis of most herds
- Also called as estate acetonemia

- Occurs in cow with good to excessive body condition and have high lactation potential.
- A greater proportion occurs as a case of subclinical ketosis. (there are increased concentration of circulating ketone bodies but no overt clinical signs).

- Affected cattle recover with correct feeding and ancillary treatment.

Secondary Ketosis



Occurs where the presence of other disease results in a decreased food intake.

Alimentary Ketosis

Feeding high butyrate silage

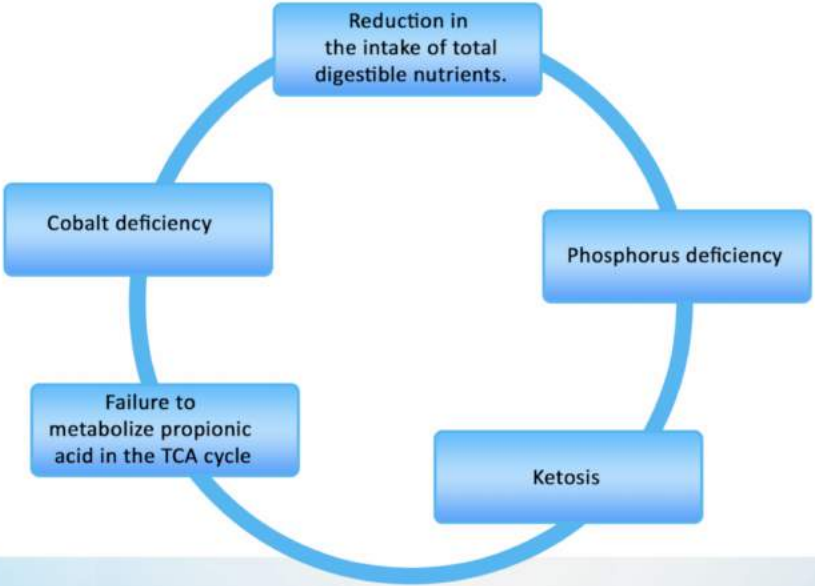
Commonly subclinical in nature

It predispose to development of production or primary ketosis.

Starvation Ketosis

- Cattle with poor body condition
- Fed poor quality feedstuffs
- Deficiency of propionate and protein from the diet
- Limited capacity of gluconeogenesis from body reserves
- Affected cattle recover with corrected feeding

Ketosis Resulting from Deficiency of Specific Nutrients



Etiology of Bovine Ketosis

Common in heavily producing cows

Ruminants are prone – very little carbohydrate is absorbed as such

A direct supply of glucose is essential for tissue metabolism – particularly for lactose

Utilization of VFAs for energy production is also dependent on available glucose

Period between calving and peak lactation the demand for glucose is increased

Low blood glucose – low blood insulin - long chain fatty acid s released – under the influence of low insulin – glucagon ratio and high somatotropin - ketogenesis

Etiology of Ovine Ketosis

Decline in the plane of nutrition during the last 2 weeks of pregnancy
Particularly in ewes with twins or triplets
Well fed in early or mid pregnancy

Biochemical differences - an elevation of plasma cortisol levels and significant hepatic dysfunction
Primary pregnancy toxemia
Secondary pregnancy toxemia

Primary Pregnancy Toxemia

Fall in the plane of nuitrition during the later half of pregnancy

Unaccustomed feed
Cold inclement

short period of fast in conjunction with management procedures such as shearing, drenching

Pregnancy Toxemia

Fat ewe pregnancy toxemia – over fat condition in late pregnancy
Reduction of the rumen volume by the pressure of intra -abdomen fat and fetus

Starvation pregnancy toxemia - extensive grazing systems – in prolonged drought and no alternate feed supply

Secondary pregnancy toxemia – intercurrent diseases – foot rot – heavy worm infestation - sporadic diseases

Epidemiology – Bovine

- Clinical ketosis - increased with parity peaking at the fifth to sixth lactation
- Over feeding in late lactation – ketosis in next lactation
- Common during the first month of lactation
- Less common in second lactation

- Diets - < 8% protein before calving or that have high protein level >20% DM after calving
- 30to 40% cases - complicated by concurrent diseases such as metritis, TRP, abomasal displacement
- Cystic ovaries, increased calving to first service interval, increased calving to last service interval are associated with subclinical ketosis

Pregnancy Toxemia

- Primarily a disease of intensive farming
- Occurs only in ewes in the last 6 weeks of pregnancy
- Usually during the last month
- Ewes carrying twins and triplets
- Intercurrent diseases in late pregnancy

Thank you