International Dairy Topics

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Enterotoxigenic E. coli II

Treatment

The primary therapy for calves affected by ETEC is the appropriate replacement and maintenance of the lost fluids. It is imperative to correct the metabolic acidosis and hypoglycaemia and to regain the normal hydration status.

Calves with peracute signs or calves that can stand but show obvious signs of dehydration, including cool and dry mucous membranes and an absent or reduced suckle reflex, should at least be started off with intravenous therapy. Calves that can walk and show a good suckle reflex are usually given fluids orally.

As a general guideline, recumbent calves are 12-15% dehydrated and have a base deficit of 15-20 mEq per L, weak calves are 8-12% dehydrated with a base deficit of 10-15 mEq per L and calves that can walk are 5-8% dehydrated with a base deficit of 5-10 mEq per L.

A 40kg calf that is 10% dehydrated will require four litres of fluids. There is still a lot of debate about the preferred composition of these replacement fluids, especially for the initial treatment of ETEC infections in calves. However, these fluids need to contain glucose for correcting the hypoglycaemia and sodium bicarbonate to tackle the base deficit.

Calves that were initially recumbent usually look much improved following 2-4 litres of appropriate intravenous fluids and should be standing within six hours and nursing within 6-24 hours of the start of the treatment. Such a response tends to confirm the diagnosis as ETEC and rules out colisepticaemia. Intravenous therapy can be quickly replaced by oral therapy in calves that recover quickly and regain their suckling response and want to eat.

Antibiotic therapy for peracute ETEC infections is controversial and in the current political climate contraindicated unless there are clinical signs to suggest a septicaemia involvement. However, one needs to counter this with the view that oral antibiotics offer the option to reduce the ETEC burden in the gut and with this a reduction of the source of the enterotoxin.

If diarrhoea persists after four days the possibility of concurrent infection with other micro-organisms should be considered.

Milk or milk replacers should be withheld for no longer than 24-36 hours during which a high quality oral electrolyte energy source should be fed 4-6 times daily.

Prevention

When ETEC is present 70-100% of calves can be affected and as many ETEC strains show multi-antibiotic resistance the use of yet another antibiotic is not the best solution.

Management should be thoroughly assessed with regards to cleanliness of dry cows, colostrum, feeding equipment, maternity/calving areas and newborn calf facilities.