

Cryptosporidiosis

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Disease are inevitable reality of globe because of world squeeze into a village more appropriately global community, there is no physical boundary to restrict causative agent of zoonotic disease or marking the border for them. These are infecting the all living being without any discrimination of creed, race and social believes and compelling to them into grave. Ultimately, global community is paying the price for Economic, social, political catastrophe and deterioration of culture, Health, education and social norms.

To Combate, this bolt from blue, a notion of "One Health " is physical, social and scientific approach.

Cryptosporidiosis is water borne, zoonotic, protozoal disease of animals and humans which is mainly characterized by profuse watery diarrhea, enteritis, tenusmus and colic of lower intestine and death. This also comes under the umbrella of one Health Control program.

Cryptosporidium Parvum was first identified in 1907 by Edward Earnst Tyzzer in mices. There are 25 species are identified out of which four are important. This is a cosmopolitan in nature. The largest outbreak took place in Milwaukee in 1993 as the result of this, 4 lac people died within period of 2 weeks. This incident occurred due to contamination of table water in Milwaukee city of Wisconsin state U.S.A. and cryptosporidium hominis which is causing disease in humans and others species are C. Felis, C. Melegridis , C. canis, C. suis.

The prevalence of this disease depends on the immunocompetent status of host, hygienic condition and contamination of

drinking water. Hence this is one of significant and highest reason of morbimortality in calves. Immune system is not functional at early age in calves. Therefore, it is constitute a major Public Health threat.

Classifications of protozoa indicates, Apicomplexa have apical complex structure which penetrates into Host Cell membrane.

Phylum	Apicomplexa
Class	Conoisdasia
Order	Eucoccidiorida
suborder	Eimeriorina
Family	Cryptosporidiidae
Genus	Cryptosporidium

Table 1

Life cycle

The infective stage is oocyte that passed in feces and contains four sporozoides through the fecoral route these oocyte can be ingested by the susceptible host. When ingested, sporozoides are released from oocyte and sporozoites transforms into trophozoites which replicates and produces oocysts. Thick and thin wall oocyte are produced ultimately thick wall released in feces from the host and thin wall are involved in autoinfection thereby releasing sporozoides that invades the enterocytes and produce the pathogenic effect over there.

This invades on the enterocytes of intestine and causes the ulceration and necrosis of this part. Its oocyte can be seen which are spheroids and 4-6 um in diameter.

Clinical signs

- Diarrhea (bloody, profuse Watery),
- Dehydration
- Sunken eyes,
- Dull,
- lethargic,
- Increase heart rate,
- Dry muzzle
- Straining while try to defecate
- Abdominal pain
- Gastroenteritis
- Vomit
- Pyrexia.

Dx

- Foul smell grossly
- CBC
- Enzyme immunoassay
- Microscopic examination of stool
- DNA Base ESSAY Life cycle.

Transmission

This can be transmitted by fecoral route by ingestion of contaminated food or by drinking of contaminated water 2) by direct contact with person 3) through the fomites.

Rx.

Nitazoxanide (Alinia)

This is a protozoal drug of choice for cryptosporidium it can be given peroral and available in the form of tablets.

It can be used with precaution, carries some adverse effects such as Itching, dizziness, allergic reaction and sometimes dyspnea may occur.

Prevention

- Isolation of healthy calves from sick calves.
- Good hygienic practices should follow.
- Frequent spraying of disinfectants.
- Make sure, proper Colostrum feeding to new born calves.

Health is one of greatest blessing of Allah Almighty, so, we should have universally sagacious approach to overcome the zoonotic diseases, by applying the one health program that refers to mitigation and prevention of disease hazards that have relationship among human, animal, and their environment.

One Health is basically a prophylactic approach including the accurate detection, diagnosis, prevention and treatment, emphasis on zoonosis transmission, reduction in Climate change, protection of environment and risk management.

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