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Short Communication

Epidemiology of Coenurosis in Small Ruminants

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Coenurosis is a parasitic illness caused by infection with the larval stage (Coenurus cerebralis) of *Taenia multiceps*. C. cerebralis particularly infects sheep and goats, posing a public health risk.

Adult stage of *Taenia multiceps* inhabits the small intestine of its definitive hosts including dogs, coyotes, foxes, and jackals. The metacestode, C. cerebralis, resides in the brain and spinal cord of their intermediate hosts such as sheep, goats, buffaloes, cattle, equines and camels resulting in cerebral coenurosis characterized by nervous manifestations.

Coenurosis is a serious challenge to small ruminant farming, is implicated for morbidity, mortality and substantial economic loss in small ruminants. Human cases have been reported in Canada, Egypt, France and USA. Infection is accomplished via fecal-oral route, through food and/or water contaminated with infective eggs.

Coenurosis is cosmopolitan, particularly in sheep-flocks of the many countries, wherever animals are chiefly herded over open field grazing lands, beside sheep and goat population is accompanied with dogs that help to control the herd. The prevalence of coenurosis is affected by several factors as age, sex and season, managemental and ecological factors. Notably, the infection rate is quite high in sheep and goats.

Diagnosis of coenurosis depends on a combination of clinical pictures, epidemiological data, post-mortem examination, pathological lesions and morphological characteristics.

Histopathological findings in cerebral coenurosis are focal necrosis, demyelination in brain tissue, congestion, diffuse microgliosis, infiltration of lymphocytes and histiocytes. Affected animals show neurological signs such as depression, head shaking and circling, altered head position, incoordination and paralysis in many animals. The predilection site of coenurus cysts is the CNS of the intermediate host, resulting in neurological disorders. The number, size and site of the cysts seem to be serious in the pathogenesis of coenurosis. Clinical signs of infected sheep include lateral deviation of the head, circling movement, head shaking, unilateral blindness, head pressing against the wall, depression, incoordination and ataxia and lateral recumbency with stretched limbs and convulsions. These signs are quite similar to those resulting from listeriosis, brain abscesses, nasal maggots and cerebral echinococcosis so, they are not differential diagnosis of coenurosis in sheep. Postmortem examination of slaughtered animals is the gold criterion for confirmation because of poor prognosis of infected animals and unafford ability of new technology such as Computed Tomography (CT). Molecular identification and genetic variability of coenurus derived from slaughtered animals were ascertained by PCR-sequence analysis of nuclear (ITS1) and the mitochondrial (COI) and (ND1) gene markers. Understanding the genetic diversity in the parasite is essential for implementation of prevention and control programs.

Control of coenurosis has been a sophisticated task and unsatisfactory till now. Once clinical signs of coenurosis is appeared, the prognosis of infected animals becomes bad and mortality rate is 100%. Several anthelmintics have been used against ovine coenurosis

with no or little efficacy. Surgery can be an effective form of treatment for coenurosis in cases which have skull softening, visual deficits, circling or a combination of these signs. For prophylaxis, dogs should be regularly dewormed, besides condemning the cysts at abattoirs and keeping dogs away from livestock.

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