



Elephant surra

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Surra, trypanosomosis of elephants first came to the attention of G.H. Evans, a Veterinary officer from Burma in 1889. The disease is known to elephant owners as *Tbut*.

Epidemiology

The causative agent of surra is *Trypanosoma evansi*. Surra has got wide distribution in Asia and Africa. It has also been reported in elephants of Kerala. It occurs mainly during rainy and post rainy season when the insect vector population is high. Biting flies particularly *Tabanus* species transmits the disease mechanically. Transmission occurs easily when the animals are closely confined and put together as in animal fairs. Elephants usually suffer from chronic form of trypanosomosis.

Pathogenesis and clinical signs

After entering in to the body through the vector bite wounds, the parasites multiply in the blood and body fluids and cause inflammatory changes and anaemia.

Early stages of the disease will seldom be evident. Although the mahout might have noticed that his elephant showed some signs of illness, fever, some reduction in appetite and a tendency to tire rather quickly, he would be unlikely to report the fact because an elephant out of work through sickness meant a driver without pay.

Common clinical signs include dullness, listlessness and sleepy appearance. They will be inclined to move about, and if made to do so, the movements are sluggish. The eyes appear dull and dim. In some cases there will be frothy discharge from eyes. Skin appears dry and harsh. The mucous membranes will be very pale and in later stages becomes yellowish

tinged. There may be mulberry coloured spots on them, but these are not constant. The bowels are generally normal, but there may be constipation and dung covered with mucus. The urine is scanty and gradually becomes viscid and often markedly greenish in colour. Gradual but progressive loss of condition and strength is not appreciable until pronounced. The appetite remains good. Accompanying debility and prostration of strength, there may be dropsical swellings, which may appear between the jaws, lower parts of abdomen, chest and limbs. Some animals may die due to progressive anemia and weakness while others seemed to recover following therapy.

Diagnosis.

The traditional method of diagnosis is based on clinical signs and demonstration of parasites by direct or indirect methods. Direct techniques for identification of trypanosomes include wet film and stained smear examination of blood. In animals with subclinical infection or carrier state, there is low degree of parasitaemia and examination of blood by above methods may not yield correct diagnosis. In such cases centrifugation method, anion exchange techniques and animal inoculation techniques such as haematology, biochemical tests and serological tests are also useful in diagnosis of trypanosomosis.

Treatment

Several drugs against *T. evansi* infection are available in the market which include

1. Diminazene aceturate - used in the dose rate of 3.5 mg / kg body weight by deep intramuscular route.
2. Quinapyramine sulphate - which is a quinoline group of compound given at the dose rate of 5mg/kg body weight by s/c route.
3. Quinapyramine prosalt- is an established chemoprophylactic agent. It is used for the treatment of clinical cases at the dose rate of 7.4 mg / kg body weight.
4. Anticide methyl sulphate at the dose rate of 2-3 mg / kg body weight is proved to be very effective in treatment of elephant trypanosomosis.

Control

Surra is maintained under natural conditions by the presence of *T. evansi* in the blood of susceptible animals and by the presence of hematophagous arthropods in the vicinity of infected animals. Elimination of trypanosomes from the blood of infected animals or elimination of vectors or prevention of contact between vector and host animal would result in the disappearance of the disease. This can be achieved by regular inspection, early and accurate diagnosis, segregation, treatment, and follow-up observation of cases, careful disposal of carcasses and use of adequate quarantine measures. Vector control can be achieved by use of insect repellants, manure disposal, clearing of vegetations along watercourses, use of biological predators and displacement of watering points.

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