There were some similarities in the oestrogen response to PMSG and male stimuli. In both cases oestradiol rose quickly and remained elevated for sometime before the preovulatory surge of LH took place.

References


Acute Salinomycin Toxicity in a Turkey Flock

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Salinomycin which belongs to the group of polyether ionophore antibiotic, is a fermentation product of Streptomyces albus (Kinashi et al., 1973) and used predominantly as a coccidiostat for broiler and replacement layer chickens. This communication reports the clinical, anatomical and histopathological aspects of unintentional poisoning by salinomycin in turkeys.

Materials and Methods

In January 2012, sudden mortality was noticed in a 35 week old cross bred turkey breeder flock in Karur Distinct of Tamil Nadu. Seven hundred birds were maintained in deep litter system of management. Among them 200 were male and the remaining 500 were females. Hundred male and 50 female birds died within a short period of 3 days. The farmer also lost 15 meat type male turkeys of 45 week old of 10 kg body weight. In the same farm premises, the farmer maintained 2500 turkey chicks of 8 to 12 week old. Routinely all the birds were fed with commercial turkey feed. Since the stock of turkey feed was over the broiler chicken feed was fed on a temporary basis. Continuous feeding of broiler chicken feed resulted in death of turkeys in the various age groups from day 4 onwards. On the 3rd, 4th and 5th day, 3, 69 and 78 birds respectively died. On the first day of incident the producer treated the birds with Sulphamethaxazole, Trimethoprim and electrolytes, since an infectious disease was suspected to be the cause of the deaths. Despite the treatment mortality increased.

The farmer submitted three dead birds to the Poultry Disease Diagnosis and Surveillance Laboratory for postmortem examination. All the birds were subjected to detailed necropsy examination and gross lesions were recorded. Heart blood swab and liver impression smear were collected for

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bacteriological examination. Trachea, lung, spleen, proventriculus and caecal tonsil were collected for the screening of Newcastle disease virus by Haemagglutination (HA) and Haemagglutination inhibition (HI) test. A piece of liver, kidney, heart, pectoral muscle, sciatic nerve and brain were collected in 10% neutral buffered formalin and 5 μm sections were cut and stained with hematoxylin and eosin.

**Results and Discussion**

Cultural and serological examination of collected samples revealed no organisms of any etiological significance. On further investigation, the commercial feed manufacturer also accepted the inclusion of salinomycin at 50 ppm level.

Turkey is very sensitive to salinomycin since as little as 20-30 ppm in the feed may cause clinical signs and mortality, where as chickens are relatively resistant due to difference in the extent of the metabolism of ionophores occurring in this species (Nebbia et al., 2001). Even though, the broiler feed with salinomycin was fed to all the turkey birds, adults showed mortality whereas the growers (8 to 12 weeks) were not affected. Halvorson et al. (1982) and Potter et al. (1986) also reported high mortality in adult but not in growing turkeys from feeding diets containing similar concentration of salinomycin.

The birds were well built and good in body condition. Joints, tendons and bones of the legs appeared normal. Skeletal muscles of the thigh and pectoral were slightly mottled. Liver was enlarged and congested. Lungs and spleen showed moderate congestion. Gizzard mucosa showed patches of shallow erosions. Except the distension of the epicardial blood vessels the heart appeared normal as were other visceral organs. Histological examination of the pectoral and thigh muscles showed slightly pale staining of few fibres with hyalinized appearance and focal infiltration of macrophages and heterophils. The nuclei of the degenerated muscle fibers were displaced towards the centre from the periphery. Myocardial fibers were eosinophilic and revealed fragmentation. Sciatic nerve showed demylenation in some areas. Liver, spleen and lungs showed congestion.

The primary target organs affected by toxic doses of ionophores are striated (skeletal and cardiac) muscles. (Mendes et al., 2003). In the present study also muscle changes were observed. This may be due to the selective binding of salinomycin with potassium, and interfacing the potassium transport across mitochondrial membrane.

The broiler feed was withdrawn and new feed without salinomycin was introduced along with additional supplementation of electrolytes, vitamin B complex and AD3EC in water for seven days. The clinical signs subsided gradually and became normal within 7-10 days. This study suggested the acute toxicity of salinomycin in turkeys.

**References**


