Indian J. Anim. Hlth. (1998) 37 : 1. 61-62

CHEMOSTERILIZATION OF STRAY DOGS

P.K. SAMANTA

W.B. University of Animal & Fishery Sciences
37 & 68, Belgachia Road, Calcutta-700 037

Chemosterilization on 60 adult male stray dogs were studied by bi-lateral intra-testicular injections with 1.5 ml. of 5%. 7.5%. 10%, and 12.5% Calcium chloride ($CaCl_2$) plus 0.5 ml. of 2% Xylocaine. All the animals tolerated the injections well and the physical status of the animals were normal. Grossly, the testes reduced in size and volume after 2 weeks onwards gradually and the effects were in relation to the concentration of the used $CaCl_2$. The change was insignificant in 5% treated group but were quite significant in other groups. The histomorphological findings reveaied that 10% and 12.5% $CaCl_2$ solutions had powerful necrotizing effects on the entire seminiferous and interstitial tissue of the testicular parenchyma and thereby all the male dogs lost their structural and functional characteristics of the testes and thus became sterile permanently. The implications of the findings are discussed in relation to chemosterilization of stray dogs.

Key.Words - Stray dogs, Calcium chloride, Intratesticular, Atrophy.

Large population of stray dogs found in urban and rural areas in India pose serious problem in the community from public health point of view, since these stray dogs are primarily responsible for transmission of dreadly disease like Rabies to human beings and animals. The uncontrolled population of stray dogs are fast increasing in the country. Few attempts have been made in the past for sterilization of male dogs by intra-testicular injection of (i) Cadmium chloride (Chatterjee & Kar, 1968; and Murty & Sastry, 1978),(ii) B.C.G suspended in normal saline at a dose of 10 Units or more (Naz & Talwar, 1981) and (iii) Talsur (a product of Karnatak Antibiotics & Pharmaceuticals Ltd., 1991) yielded no eventful result. The work of Koger & Pullman (1976) showed that injection of 50% Calcium chloride solution into the horn bud of calves resulted necrosis of horn bud epithelium.

Keeping this view in mind, investigation of the necrotizing properties of Calcium chloride ($CaCl_2$) solution on testicular perenchyma in dogs seemed warranted. The work was done in order to evolve a new chemosterilization drug which would not only be highly effective but also conveniently applied in mass scale sterilization programme in dogs and other male animals like Scrub bulls in the country.

MATERIALS AND METHODS

A total number of 60 adult male stray dogs weighing 15 to 16 kg were randomly divided into Group I to V, containing 12 animals in each group. All the dogs from Gr. I to IV were given a combination of 1.5 ml. of 5%, 7.5%, 10% and 12.5% calcium chloride ($CaCl_2$) plus 0.5 ml. of 2% Xylocaine by intratesticular injection to each testis. In Gr. V 1.5 ml. of distilled water plus 0.5 ml. of 2% Xylocaine were given by intratesticular injections to act as control. All the animals were kept under observation for a period of 8 weeks. Clinical, biometrical, gross and histomorphological studies were made and the results of this study were compared between the groups and with the control. In each group both the testes were removed surgically at 4 and 8 weeks and were studied for biometrical, gross and histomorphological features. The rest of the animals were observed for over one year for functional and behavioural changes.

RESULTS AND DISCUSSION

Clinical assessment of intra-testicular injections in male stray dogs with different percentages of calcium chloride ($CaCl_2$) solution were based upon the evaluation of the clinical signs which necessarily included some purely objective evidences manifested by the animals. All the dogs tolerated the intra-testicular injections well and did not suffer from any pain, fever or marked inflammatory swelling of the testes. The physical status of the animals did not alter. 2% Xylocaine was added presumably to counteract any possibility of pain reaction of intra-testicular injections. It was found that $CaCl_2$ at a concentration from 5% to 12.5% were not painful to the sensitive parenchyma of the testes. This could be due to the non-irritating Character of $CaCl_2$ solution into body tissues which was in agreement with the observation of Koger & Pullman (1976). No other complications were observed clinically. Biometrical studies indicated that some