

The Intravenous Administration of Styrylquinoline in Equine Trypanosomiasis.

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IN a previous article the writer (1931) published the results obtained in the treatment of *Trypanosoma brucei* infection of horses by means of the subcutaneous injection of Styrylquinoline No. 314. The conclusions arrived at in that publication were that the drug in doses of 0.004 gm. per Kg. of body-weight was an efficacious sterilising agent but that the subcutaneous administration produced a severe, often alarming, destruction of tissue. A similar dose given intravenously produced toxic symptoms.

Therefore the following experiment was devised to determine firstly, whether doses smaller than 0.004 gm. per Kg. of body-weight would produce toxic symptoms when administered intravenously, and secondly, whether such smaller doses would prove to be efficacious.

The horse used in this experiment was 18095, which had previously in these experiments been sterilised by two full doses, the last of which was administered on the 19th September, 1930. Infection was produced in this horse by the inoculation of 50 c.c. blood of the *T. brucei* reservoir horse 17989. The parasites were found in blood smears and the temperature curve showed the exacerbations and remissions found in *T. brucei* infection of the horse. The dose decided on for treatment of this horse in this experiment was half that previously used. Calculated on the live body-weight on the basis of 0.002 gm. per Kg., it amounted to 0.7 gm. and was administered intravenously at weekly intervals for five weeks. No signs of intoxication were observed. As a result of this course of treatment sterilisation was obtained. The proof of this was the negative smear examination for a period of 27 days after the last dose, the absence of temperatures suggestive of *T. brucei* infection and its reaction when injected 28 days after the last dose, with the same strain of the parasite obtained from horse 17989. Chart I of the red precipitate of this horse illustrates the changes of the anaemia during and after the treatment, and also after the re-infection, additional indications of the efficacy of the drug.

On account of the success obtained in the treatment in the previous experiment it was decided to introduce a further horse for the purpose of determining whether a dose of 0.002 gm. per Kg. of live body-weight would produce, when given intravenously on five consecutive days, toxic symptoms or not and whether such a course would produce sterilisation. Thus horse 20342, which had been infected by the subcutaneous injection of 100 c.c. of blood of horse 18095 was submitted for five days to the daily intravenous injection of 0.002 gm. per Kg. No toxic effects other than a slight uneasiness

were noticed. Subsequent to treatment some slight elevation of temperatures appeared, but these did not resemble those of a *T. brucei* infection. Smear examination was negative for 8 weeks. The complement fixation test was negative. Subinoculation of a large quantity of blood of horse 20342 into a susceptible horse gave temperatures somewhat resembling those of a *T. brucei* infection, but no trypanosomes were found during 10 weeks daily examination. The sterility of horse 20342 was furthermore demonstrated by its reaction to the injection of *T. brucei* infected blood.

CONCLUSION.

Styrylquinoline No. 314 thus is an efficient sterilising drug for use in *T. brucei* infection of horses. It was first shown that the dose for this purpose was 0.004 gm. per Kg. of body-weight and that more than two doses at intervals of one week should be used. Later it was shown that half the above dose, if five doses be given, was efficacious and furthermore, that this half dose could be given intravenously without the production of symptoms of intoxication whereas the intravenous injection of a full dose did produce alarming symptoms. The half dose was equally efficacious whether given at weekly intervals or on consecutive days. The administration of the drug subcutaneously cannot be recommended for in equines it produced marked irritation and destruction of tissues. Its administration by the intravenous route is recommended.

LITERATURE.

PARKIN, B. S. (1931). Styrylquinoline No. 314 in Trypanosomiasis. 17th Rept. Dir. of Vet. Serv. & Anim. Indust., Union of S. Africa, pp. 77-82.

