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BRIEF COMMUNICATION

Schistosoma mansoni SAMBON, 1907: EFFECTS OF DILATATION AND CONSTRICTING ANESTHETICS DRUGS ON ADULT WORMS LOCALIZATION IN SWISS MICE

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Barbiturate drugs are commonly employed as anesthetics in surgical practice[1] as well for laboratory animals[8]. However, some reports indicated that mated worms are dislodged from the mesenteric veins towards the liver or portal vein, when anesthetics are administered to mice infected with *Schistosoma mansoni*[1,2,3,4].

Our previous experiments showed that both injectable (sodium pentobarbital) and volatiles anesthetics (ether and chloroform) induce migration although the first promotes a greater hepatic shift[3]. Concerning these volatiles anesthetics, the migration was greater in mice submitted to ether according to other researches that compared the action of several anesthetics (ether, phluorane and metoxiphluorane)[4].

This paper deals with the location of adult *S. mansoni* worms in albino mice anesthetized with a barbiturate (sodium phenobarbital) and a carbamate (uretan) which are routinely employed as anesthetics for laboratory animals[8] and show differences related to the mode of action: dilatation and constricting anesthetics, respectively.

Thirty female albino mice (22 g) were subcutaneously infected with 80 cercariae of *S. mansoni* (BH strain, Brazil)[3]. After 56 days of infection, 20 animals were anesthetized with sodium phenobarbital (5 ethil-5-phenilbarbiturate) or uretan both injected intraperitoneally (10 mg/wb). Immediately following anesthesia, the animals were perfused[7] and adult worms recovered as described elsewhere[3]. Ten animals that were not submitted to the anesthetics (control group) were euthanasied by cervical displacement. As can be seen in figure 1, sodium barbiturate induced a greater hepatic shift (80%) than uretan (62%). In the control group, only 20% of adult worms were recovered from liver or portal vein. Statistical analysis (Mann-Whitney and Kruskal tests[6]) revealed that the differences between these groups and the control were statistically significant ($p < 0.05$). However, no statistical differences were verified between both anesthetics.

The present report confirms that anesthetics drugs have a great ability to induce worm shift from mesenteric veins towards liver or portal vein[1,2,3,4]. The mechanism of

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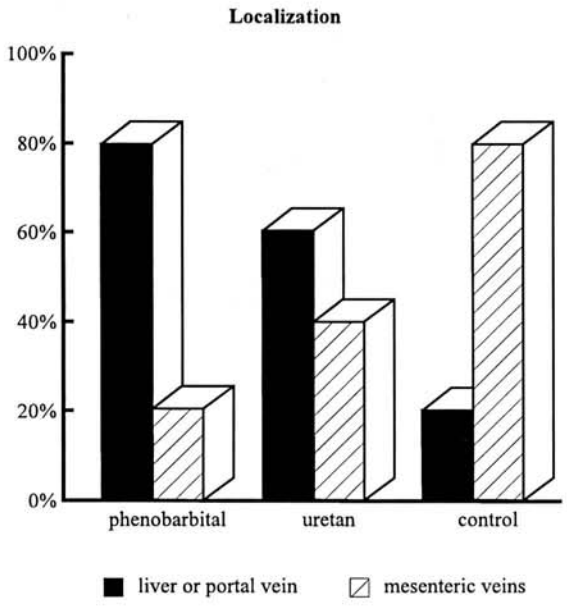

Fig. 1 - Localization of *Schistosoma mansoni* adult worms (liver or portal vein and mesenteric veins) in white mice, after anesthesia with sodium phenobarbital and uretan. Control: animals not submitted to anesthetics.

action of these drugs is uncertain, the worm shift possibly is due to a depressant action on the central ganglion of the parasite and the paralysis of the worms[2], after a decreasing in electrical activity of the worm[5]. Meanwhile, the muscular relaxant galamine did not cause shift[4]. Sodium phenobarbital and uretan which have different mode of action (dilatation and constricting, respectively) showed the same effect but in different proportions, thus suggesting that the worm shift involves an action of the anesthetics on the host and on the worms. Vessel lumen and bloodstream are increased by sodium phenobarbital administration, probably favouring worm dislodgement.

Finally, it must be pointed out the clinical significance to infected patients of this action of anesthetics drugs which are routinely employed in surgical practice and even other pharmacologically active drugs which can provoke worm shift.

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