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A new chemotherapeutic property of metronidazole: effect against oxyurids in mice

Metronidazole, 1-(2′-hydroxyethyl)-2-methyl-5-nitroimidazole, was first found to be effective against genito-urinary trichomoniasis (Cosar & Julou, 1959). Later, it was shown to be useful in the treatment of giardiasis (Mandoul, Dargelos & Millan, 1961), acute ulcerative gingivitis (Shinn, 1962) and amoebiasis (Powell, Macleod & others, 1966). It was also claimed to be effective in controlling acute clinical manifestations in cases of dracunculosis (Pardanani & Kothari, 1970). Metronidazole is therefore an established antiprotozoal agent with broad-spectrum activity. We have found it effective against oxyurids, the common intestinal helminth of rodents.

Experiments were carried out in laboratory bred SRC strain albino mice of either sex. Previously uninfected mice, 18–20 g, grouped according to sex, were kept in association with other mice infected with oxyurids of both the species, *Aspiculuris tetraptera* and *Syphacia obvelata*. After 20 days a random sample showed the infections to be established uniformly. The newly infected mice were distributed in cages, 5 in each, according to sex and weight. Metronidazole, at different doses, was suspended in 0·2% tragacanth and 0·2 ml of the suspension was administered by gavage. Either a single dose or three once daily doses were given. For every treated group a similarly infected group was kept as control. On the 5th day after the start of treatment, both the treated and control group mice were killed and individual, intestines and caecae were examined microscopically for the presence of oxyurids. At single doses of metronidazole of 225 mg kg^{-1} and above and after three daily doses of 75 mg kg^{-1} and above, there was 100% clearance of oxyurids while the controls all remained infected.

These results prove that the rodent oxyurids are susceptible to metronidazole. This compound is well tolerated and does not produce serious toxic effects. In view of the findings, it may prove active against pinworms, *Enterobius vermicularis*, in man.

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