Clearance of microfilaraemia and red blood cell glutathione peroxidase (GPX) levels in asymptomatic microfilaraemics after single dose and fourteen days treatment with diethyi carbamazine citrate (DEC)

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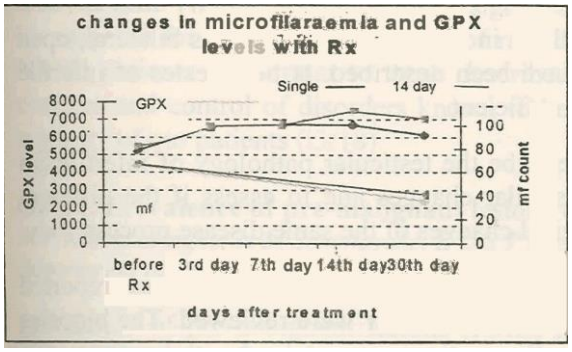
Background: Sinale dose and fourteen day treatments with DEC have been found to have similar microfilaria clearance rates. Although the microfilaricidal action of DEC is not clearly understood, stimulation of platelets by the drug to release free radicals, especially those related to GPX. seem to play a role.

Aim: To study the clearance of microfilaraemia and changes in red cell GPX levels in asymptomatic microfilaraemics after single dose and fourteen day treatment with DEC.

Methods: 22 asymptomatic micro filaraemics were block randomised to receive either a single dose (300mg),[n=l 1 (5 males), mean age 34yrs(range 15 -59)] or fourteen days treatment (total of 4.2g) [n=l 1(6 males) mean age 29.8yrs(range 16 -57)] with DEC. Baseline and one month post treatment microfilaraemia was assessed by Nuclepore® membrane filtration using 1ml of heparinised venous blood obtained between 9 and 11 p.m. Red blood cell GPX levels were analysed using spectrophotometry "before and on the 3rd, 7^{lh}, 14th and 30th days after commencement of treatment using 2ml of venous blood collected into an EDTA bottle between 8 - 9 am on each day. Assays were done within 6 hours of blood collection. Blood was stored at 8°C until analysis.

Results:



A gradual and significant increase in GPX levels was observed up to day 14 in both treatment groups (day 3,7,4 pO.OI) and then started to decrease.

There was no significant difference in reduction of *mf counts* (p~0.31) or in GPX levels on day 14(p=0.12) and day 30 (p~0.06) between the two treatment groups

Conclusions: The 14 day course does not offer a significant advantage over a single dose of DEC in reducing microfilarial counts and inducing the participation of GPX related free radicals inmicrofilarial clearance.