OP-6. Red blood cell antioxidant levels after treatment with diethyl carbamazine citrate in persons with asymptomatic microfilaraemia

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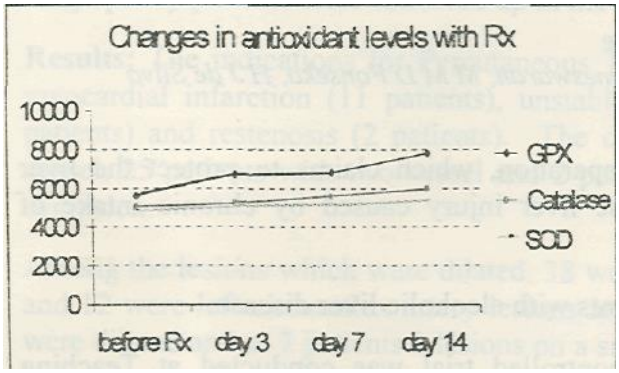
Background: The microfilaricidal action of DEC is poorly understood. *In-vitro* studies have shown that, DEC stimulates platelets to release unspecified free radicals, which have microfilaricidal effects. In amicrofilaraemics living in endemic areas, red cell glutathione peroxidase (GPX) levels are significantly higher than in asymptomatic microfilaraemics. Catalase and superoxide dismutase (SOD) levels between these two populations are not different. This suggests a possible role for GPX related free radical species in the clearance of micro filaraemia.

Aim : To study, *in-vivo,* the changes in red cell GPX, catalase and SOD in asymptomatic! microfilaraemic oatients after treatment with DEC.

Methods : Ten patients [(6 males), mean age:29.8yrs (range 16-57)] with asymptomatic microfilaraemia were tested fpr red cell GPX, catalase and SOD levels using spectrophotometir before and on the 3^{rd}.7^{l11} and 14^{th} day during a 14 day course of DEC. 2ml of venous blood was collected into an EDTA bottle between 8.00 and 9.00 am on each d^y. Assays were done within 6 hours of collection. Blood was stored at 8 C until analysis.

Results:



A gradual and significant increase in GPX levels was observed up to the 14th day of treatment, (day 3, 7 and 14. p< 0.01).

A slower and non-significant increase in catalase and SOD were also observed during treatment up to day 7. (p>0.05) and on day 14 the catalase level was significantly different **0X0.01)**

Conclusions: The early and significant rise of GPX levels suggests a rapid increase in GPXj related oxidant species in blood in response to DEC treatment. The late rise in SOD and catalase levels could be due to stimulation of immunological pathways by dead parasite antigens, as these two antioxidants are known to participate in the IgE mediated immunological pathway of the host parasite relationship.