

Regeneration Of Red Cell Cholinesterase Activity Following Pralidoxime (2-PAM) Infusion in First 24 Hours In Organophosphate Poisoned Patients

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Background : Oximes such as pralidoxime chloride reactivate acetylcholinesterase. However their role in management of organophosphate poisoning is controversial.

Objectives : The study was carried out to find effectiveness of pralidoxime chloride (2-PAM) in regenerating red cell acetyl cholinesterase in first 24 hours following administration of it in dose recommended by World Health Organisation. **Patients and**

Methods : Eight patients with OPP [chlorpyrifos (3), phorate (3), dichlorvos (1) and monocrotophos (1) who fulfilled the criteria for inclusion were investigated. In addition to decontamination and atropine, all these patients were administered 30 mg/kg body weight of 2-PAM as bolous dose followed by 7.5 mg/kg body weight/hour with maximum dose being 500 mg/hr as continuous infusion till first 24 hours. Red cell AChE activity was estimated every 15 minutes for first 4 hours ,one hourly for next 4 hours and then 2 hourly till 24 hours and subsequently without 2-PAM every 12 hours till 7 days or discharge or death which ever earlier. **Results :** In all the patients maximum increase in activity was observed in first 4 hours following which rise was very slow despite continued 2-PAM infusion and reaching a steady state IN 20 hours in all the cases. The increase in red cell AChE activity observed in diethyl group at 24 hours of 2-PAM infusion was 154%vs 81% in dimethyl group. At 7 days the increase in activity was 215% vs118% respectively. However on multiple repeated ANOVA, no stastically significant difference was observed between diethyl and dimethyl groups at admission and discharge ($p>0.05$). Similarly no significant difference was observed in three groups when patients were categorized according to WHO classification of oranophosphates ($p>0.05$). **Conclusion :** The maximum increase in red cell AChE activity occurs in first 4 hours of 2-PAM administration followed by a slow increase despite 2- PAM infusion for 24 hours.