

Role of Lipid Emulsion in Management of Organophosphate Compound Poisoning

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Objectives: To prospectively study the effects of 20% Lipid Emulsion (Intralipid) morbidity and mortality in organophosphate compound (OPC) poisoning.

Methodology: A prospective open label pilot study was carried out at a tertiary care hospital in North India. Forty patients were enrolled and managed with conventional treatment. None of the patients were given 2 PAM. In addition, 100ml of 20% Intralipid was administered intravenously at admission. Patients were monitored till discharge or death. During the stay, vitals, hematologic and biochemical parameters, morbidity (duration of hospital stay, duration of ventilation) and mortality was noted. The results were compared with age and sex matched historic controls.

Results: The cases comprised of 57.5% males and 42.5% females, with a mean age of 30.9 years. Baseline characteristics were comparable between the intervention and the control groups. The respiratory symptoms improved early and there was a statistically significant difference between cases and controls at 24 and 48 hours ($p=0.011$, 0.01 Chi square). There was no change in hemodynamic parameters between the groups after the intervention ($p=NS$ t test). While both groups showed an equal incidence of fever initially, temperatures normalized earlier in the cases compared to controls ($p=0.03$, Chi square). There was no significant change from baseline in hemodynamic, hematological and biochemical profiles after administration of Intralipid in intervention group. The complication rates were equal in both groups ($p=NS$, Chi square) except for ventilator-associated pneumonia which was higher in historic controls ($p=0.04$ Chi square). The mean duration of mechanical ventilation was 1.9 days in cases versus 6.3 days in controls ($p=0.001$ t test) The duration of hospital stay was also markedly reduced in the intervention group with a mean of 4.8 days versus 10.63 days in controls ($p=0.00$, t test).

Conclusion : A significant reduction in morbidity (duration of hospital stay, mechanical ventilation) was noted in the intervention arm, however there was no significant change in mortality. Comparison with historic controls was a significant limitation of this study.