

Bioscavenger therapy in organophosphate poisoning (BIOSTOP) - a pilot study

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Introduction: Accidental and suicidal poisoning with organophosphate compounds continue to be an important reason for intensive care admissions in developing countries. Traditional approaches of treating with Oximes have had limited success. Fresh frozen plasma (FFP) as a bioscavenger has been described to result in dramatic reductions in mortality and incidence of intermediate syndrome (1). While this has been attributed to the mopping up effect of Butryl- cholinesterase in the FFP, others have argued the role of albumin in adsorbing the organophosphate (2). **Design:** Pilot open label three arm randomized controlled study. **Methods :** 60 consenting patients with organophosphate poisoning were randomized to receive either FFP (8 bags over 3 days), 20% Human Albumin (400ml over 3 days) or Saline (2000ml over 3 days) in addition to atropinisation and supportive care. Oximes were not used. **Results:** The interventions did not affect the need for ventilation (73.7% vs. 75% vs. 73.7% in FFP, albumin and saline arms) or prevent delayed intubations (>6 hours after randomization) (5.3% vs. 5% vs.5.3%). There were no statistically significant (all p values >0.1) differences in mean (\pm SE) total atropine required in the first 3 days (536 \pm 132 vs. 361 \pm 125 vs. 789 \pm 334), duration of ventilation (10.0 \pm 2.0 vs. 7.0 \pm 1.4 vs. 7.5 \pm 1.5 days) or length of hospital stay (11.94 \pm 2.2 vs. 9.8 \pm 1.4 vs. 9.8 \pm 1.6 days). Although similar rates of mortality were observed in all arms (16.7% vs. 20% vs. 15.8%), there was a trend towards higher incidence of clinically definable intermediate syndrome in patients administered FFP (53.3% vs. 25% vs. 21.4%). **Conclusions:** Although the small number of patients studied limits interpretation, fresh frozen plasma and albumin do not seem to confer any significant clinical advantage to organophosphate poisoned patients in terms of mortality or morbidity. **References:** 1. Guven M, Sungur M, Eser B, et al. The effects of fresh frozen plasma on cholinesterase levels and outcomes in patients with organophosphate poisoning. J Toxicol Clin Toxicol. 2004;42(5):617-23. 2. Fulton JA, Bouchard NC, Becker ML, et al. FFP in organophosphate poisoning: what's the secret ingredient? Clin Toxicol (Phila). 2005;43(3):215.