

Conventional bolus dose versus Incremental dose Atropinisation in Organophosphorus poisoning - A Randomized Clinical Trial

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Objective: Severe organophosphorus compound (OPC) poisoning is an important clinical problem in many countries of the world. The rapid and effective stabilization and treatment of pesticide poisoned patients on their admission should reduce the number of early deaths. In this regard the efficacy and safety of incremental dose atropinisation followed by atropine infusion to conventional bolus dose atropinisation needs evaluation. **Method:** A randomized clinical trial was conducted in the in-patient department of Medicine, Chittagong Medical College, Chittagong, Bangladesh on 156 cases of OPC poisoning from June to September, 2006. The patients were divided into two groups. The patients randomized to conventional bolus dose regimen were treated by giving atropine 2 mg to 5 mg intravenously and this was repeated every 10 to 15 minutes until signs of atropinisation were clinically evident. The subsequent dose and frequency of atropine injections were individualized either by decreasing the dose or increasing the interval between the doses. The patients randomized to incremental dose atropinisation regimen received initial dose of 1.8- 3.0 mg (3-5 amp) of atropine followed in 5 minutes by double dose if needed and so on doubling the previous dose after every 5 minutes interval till all or maximum parameters of atropinisation most importantly clear lung, heart rate (> 80/min) and systolic blood pressure (> 80 mmHg) were evident¹. After initial atropinisation, patient was maintained on atropine infusion using 10-20% of atropine required to load the patient in every hour. With each treatment regimen atropinisation was maintained for 24 to 48 hours. Other supportive treatments including use of pralidoxime were same in each treatment group. **Result:** Out of 156 patients, one patient left the hospital on his own and was excluded from outcome analysis. Among the remaining 155 patients, the mortality in incremental dose atropinisation recipients was 8% (6/75) compared to 22.5% (18/80) in conventional bolus dose atropinisation recipients ($p < 0.05$). Incremental dose atropinisation was also associated with earlier atropinisation (23.90 minutes vs 151.74 minutes; $p < 0.001$) and less atropine toxicity (12.0% vs 28.4% ; $p < 0.05$). **Conclusion:** More clinical studies to determine the optimal dosing regimen of atropine is required and incremental dose atropinisation followed by atropine infusion should become the treatment of choice for management of OPC poisoning. **Reference:** Eddleston M, Dawson A, Karalliedde L, Dissanayake W, Hittarage A, et al. Early management after self poisoning with an organophosphorus or carbamate pesticide - a treatment protocol for junior doctor. Crit Care 2004; 8: 391-396.