OP - 06

Re-visiting respiratory failure in acute organophosphorus insecticide self-poisoning in Sri Lanka

Chanika Alahakoon[1, 2], Tharaka Dassanayake[1, 2], Indika Gawarammana[1, 3], Vajira Weerasinghe[1, 2]

[1]*South Asian Clinical Toxicology Research Collaboration, Sri Lanka*
[2]*Department of Physiology, Faculty of Medicine, University of Peradeniya, Sri Lanka,*
[3]*Department of Medicine, Faculty of Medicine, University of Peradeniya, Sri Lanka*

Objective: Deliberate self-poisoning with organophosphate insecticides (OPI) with a high incidence of morbidity and mortality is a problem in the developing world. Most of the deaths are associated with respiratory failure (RF) which occurs during cholinergic crisis or intermediate syndrome. To overcome this, certain highly toxic OPI were banned in Sri Lanka and a study published in 2006 reveals the incidence of RF to be 24%. Despite the fact that more bans were inflicted after 2006, RF still remains a major contributor to deaths. Therefore this study was conducted to describe RF associated with OPI ingestion in the current context.

Methods: A prospective cohort study involving 528 patients with OPI poisoning were observed throughout their hospital stay after admission to a tertiary care hospital in central province of Sri Lanka. Exposure was confirmed based on the history and red blood cell acetylcholine esterase assays.

Results: Of the 528 patients, 142 required ventilation (26.89%). 123/142 were intubated <24 hours following ingestion (cholinergic crisis) and 19 afterwards (Intermediate syndrome). The median time to intubation in the two groups is 3.5 and 35 hours respectively with no statistical significance in the duration of intubation between the two groups. The incidence of RF is high with profenofos 32.6% (34/101), diazinon 21.5% (11/51) and quinalphos 72.7% (8/11) ingestion. X^2 test p-values for RF in chlorpyrifos, profenofos, diazinon are 0.0001, 0.1404, 0.410 with odds ratios being 0.18, 1.42, 0.72 respectively. 32/142 intubated patients died (22.5%); 13 due to profenofos.

Conclusion: The incidence of RF remains more or less the same compared to 2006 despite the bans on OPI between 2006- 2013. RF associated with cholinergic crisis or intermediate syndrome carries a similar disease burden in terms of ventilation. The odds of a patient going into RF in profenofos ingestion is 1.42 times higher than ingesting another type of an OPI and causes a significant number of deaths.