OP-33
Fatal intoxication from pyrethroid poisoning

Achara Tongpoo[1], SatariyaTrakulsrichai [1,2], Winai Wananukul[1].
[1]Ramathibodi Poison Center, Ramathibodi Hospital, Faculty of Medicine, Mahidol University, Bangkok, Thailand.
[2] Department of Emergency Medicine, Ramathibodi Hospital, Faculty of Medicine, Mahidol University, Bangkok, Thailand.

Objective: This study aimed to describe the clinical manifestations in patients who died from pyrethroid exposure and poisoning.

Method: We retrospectively studied deaths from pyrethroid poisoning, which were recorded in the Ramathibodi Poison Center Toxic Exposure Surveillance system during a 10 year period (2008-2017). Clinical manifestations in these cases were analyzed.

Result: In total, 9,739 cases were consulted due to single pyrethroid exposure, 22 cases (0.23%) died. Nineteen cases (86.4%) were poisoned by cypermethrin, among these 19 cases, eleven cases were exposed to cypermethrin 35% followed by five and three cases exposed to 10% and unknown concentration cypermethrin, respectively. Two cases (9.1%) were poisoned by betacyfluthrin 2.5% and one was exposed to deltamethrin 3%. All formulations were sold as a weight by volume emulsifiable concentrate (W/V EC). Most cases were male (72.2%). The median age of the patients was 60 years (range 29-84). All of them were exposed by the oral route and were intentional ingestions. The median amount of ingestion was 100 mL (range 30-500 ml). The median time from exposure to hospital visit was 1 hour (range 15 minutes to 10 hours). Initial presentations in the emergency department (ED) were classified as severe (6 cases), moderate (9 cases) and minor in severity (7 cases). Of the 6 cases in the severe group, 5 cases presented with cardiac arrest, the other one had a seizure in the ED. The clinical manifestations during hospitalization were hypotension (50%), hypertension (27.3%), bradycardia (18.2%), tachycardia (40.9%), seizure (18.2%), miosis (27.3%), hypersecretion (31.8%) and sweating (22.7%). Some developed acute kidney injury (18.2%) and metabolic acidosis (18.2%). The most common in-hospital complication was pneumonia (59.1%). The median time from hospital visit to death was 30 hours (range 3 - 552 hours).

Conclusion: Although pyrethroids commonly cause only mild toxicity in humans, some cases can die. Most deaths in this series resulted from ingesting cypermethrin, especially the high concentration formulation. Therefore, patients who have ingested high concentrations of cypermethrin should be carefully evaluated, closely monitored and aggressively treated including management of complications in hospital.