T H E E P I D E M I O LO G Y O F H O U S E H O L D RODENTICIDE POISONING IN HONG KONG AND ITS RISK FACTORS FOR DEVELOPING COAGULOPATHY

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Introduction: In Hong Kong, rodenticides that are registered for household use include anticoagulants (warfarin and superwarfarin), cholecalciferol and cellulose. However, there is no formal epidemiological study of rodenticides poisoning in Hong Kong.

Objectives: **(**1) To determine the epidemiology of household rodenticide poisoning in Hong Kong. (2) To identify the types of poison involved, reason of poisoning (intentional or unintentional), dose of poison intake (more than 1 pack or less), co-ingestion, and clinical severity. (3) To assess the risk factors for developing coagulopathy in rodenticide poisoning.

Methods: Retrospective case review of household rodenticide ingestion reported to Hong Kong Poison Information Centre (HKPIC) during the period from 1-7-2008 to 29-2-2012 (44 months).

Results: 110 patients were reported to have rodenticide exposure during the study period. Eighty-eight patients were included in the final analysis, of which 50 were males and 38 were females. The median age of the patients was 38.5 years old. All patients have ingested anticoagulant type of rodenticide. The exposure was confirmed analytically in 25 patients. Out of 88 patients, 80 patients (91%) took the rodenticide intentionally. Fifteen patients (17%) have taken more than one pack of rodenticide. Thirty- eight patients (43%) had co-ingested other drugs or had co- poisoning during the episodes. Thirty-one patients (35%) developed coagulopathy with an international normalised ratio (INR) greater or equal to 1.3. Among these 31 patients, 26 of them (84%) were given the antidote vitamin K1. The mean duration of treatment was 28 days. The longest duration of treatment was 123 days. Clinical significant bleeding was only observed in one patient. Presence of coagulopathy in rodenticide poisoning was significantly associated with intentional ingestion (p-value 0.029), ingestion of warfarin as compared with superwarfarin (p-value 0.037), ingestion of more than 1 pack (p-value 0.001) and presence of co-ingested drugs or co-poisoning (p-value 0.038). Patients with coagulopathy were also significantly older (p- value 0.043). Multiple logistic regression analysis showed that only 2 factors are significantly associated with coagulopathy: Ingestion of warfarin rodenticide (OR 18.20, 95% CI 3.44 -96.42) and ingestion of more than one pack of rodenticide (OR 10.01, 95% CI 1.43-69.87).

Conclusion: Household rodenticide poisoning in Hong Kong is solely related to ingestion of anticoagulant type of rodenticide. Patients who have ingested warfarin rodenticide or an ingestion dose more than one pack of rodenticide are more likely to develop coagulopathy.