



Analysis of neurotoxic pesticide poisoning in dogs based on data obtained from the UAB Veterinary Pathology Diagnostic Service

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OBJECTIVES

The aim of this study is to analyze the UAB Veterinary Pathology Diagnostic Service (VPDS) database to **assess, organize and quantify the poisonings by neurotoxic pesticides in dogs**, specifically those found to be the most relevant: **carbamates, organophosphates, metaldehyde and strychnine.**

MATERIALS & METHODS

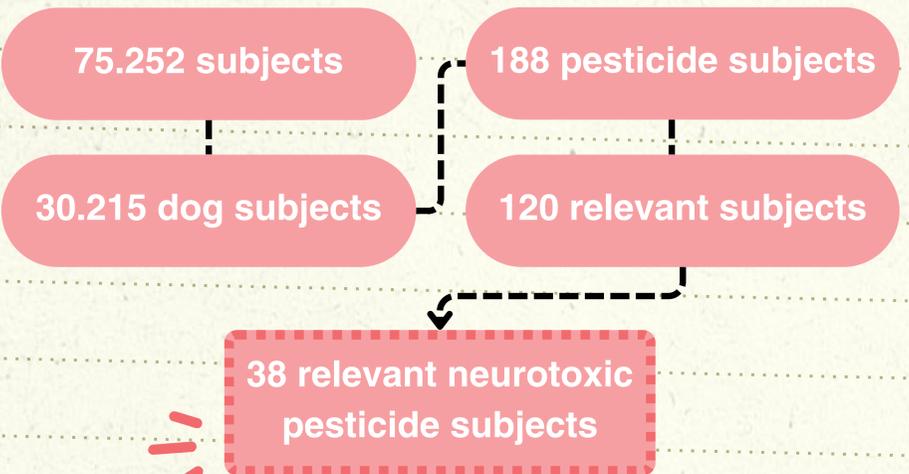


Figure 1: Flowchart used to screen, organize and select the study subjects.

Our main source of information is the database provided by the UAB VPDS which compiles all the necropsies performed from 1996 to the present-day, however, in this case the data arrives until 2023.

RESULTS

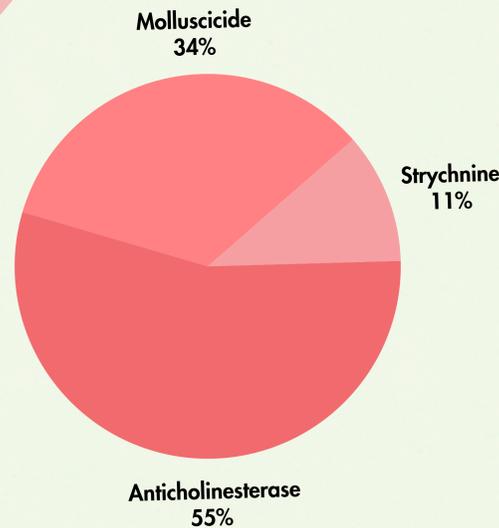


Figure 2: Distribution in percentages of each group of chosen substances over the total poisonings by relevant neurotoxic pesticides in dogs.

CONCLUSIONS

- The UAB Veterinary Pathology Diagnostic Service database is a relevant information resource which has proven to be helpful in understanding toxicosis, and might be for other pathologies as well.
- Poisoning in dogs can play a sentinel role in understanding the potential exposure to substances that are dangerous to humans, even from those that have been banned for years.
- Toxicological confirmation of cases is low, therefore we are dealing with even more uncertainty. This may also lead to an underrepresentation of the incidence of poisonings.

Anticholinesterase



Figure 3. Necropsy from subject 2010-00465-N, granulated black material inside of the stomach. Source: VPDS, 2010.

OTHER ASSOCIATED LESSIONS

- Pulmonary congestion
- Pulmonary edema
- Other congested organs and petechiae

n = 21

Strychnine



Figure 4. Necropsy from subject 2015-00403-N, intense generalized congestion of the encephalon. Source: VPDS, 2015.

OTHER ASSOCIATED LESSIONS

- Pulmonary congestion
- Pulmonary edema
- Generalized congestion and petechiae

n = 4

Metaldehyde

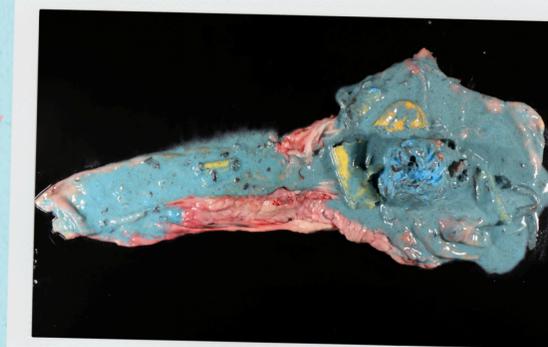


Figure 5. Necropsy from subject 2015-00034-N, open stomach shows abundant blue liquid. Source: VPDS, 2015.

OTHER ASSOCIATED LESSIONS

- Liver congestion
- Diarrheal stools
- Lesions to the lung and CNS
- Generalized congestion
- Paleness of mucosa

n = 13

