

THE USE OF PHYSOSTIGMINE BY TOXICOLOGISTS IN ANTICHOLINERGIC TOXICITY

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INTRODUCTION

- The anticholinergic toxidrome is well described and relatively common.
- Administration of physostigmine is generally regarded as the antidote to anticholinergic toxicity.
- Physicians without toxicology training may be reticent to use physostigmine due to their unfamiliarity.
- We would expect that trained Toxicologists would be relatively liberal in its use.

RESEARCH QUESTION

- How often is physostigmine administered to patients with anticholinergic toxicity that are evaluated by a Toxicologist?

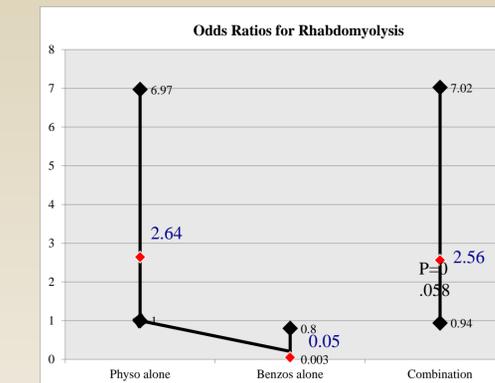
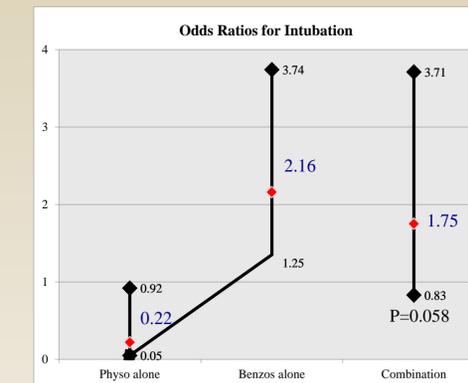
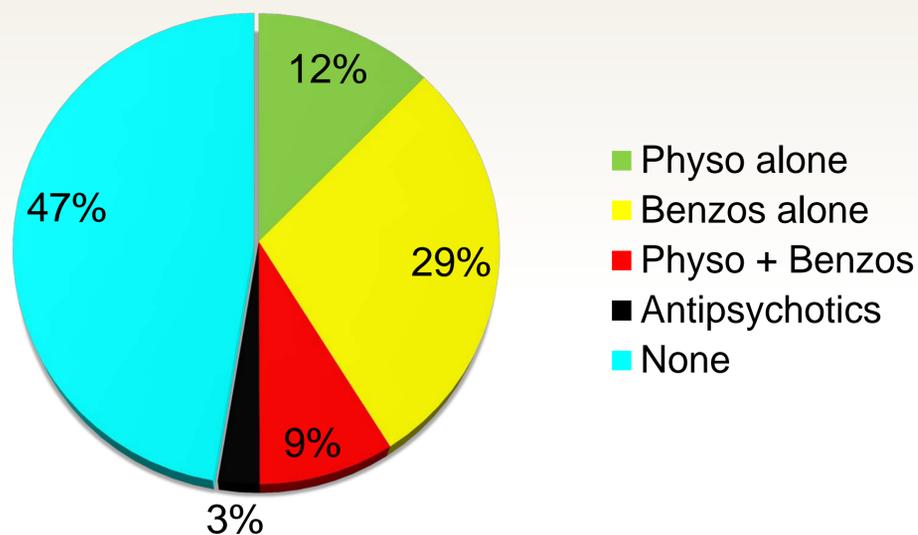
METHODS

- ToxIC registry data was retrospectively analyzed for patients who exhibited an anticholinergic toxidrome as recorded by the treating physician.
- We recorded what treatment(s) they received for their toxidrome.
- Treatments were classified as physostigmine, benzodiazepines, physostigmine and benzodiazepines, antipsychotics, or no definitive treatment.
- We determined the relative usage of the above medications in patients with an anticholinergic toxidrome.
- Odds ratios were performed on these data to evaluate correlation between adverse events, defined by investigators as rhabdomyolysis or intubation, and the treatments received.

RESULTS

- The review included 815 patients from January of 2012 through March of 2014.
- Of the patients who received physostigmine alone, 2 (1.9%) required intubation and 6 (5.9%) developed rhabdomyolysis.
- Of those who received benzodiazepines alone, 27 (11.9%) required intubation and 0 (0%) developed rhabdomyolysis.
- Of those who received a combination of physostigmine and benzodiazepines, 9 (12.5%) required intubation and 5 (6.9%) developed rhabdomyolysis.
- Of those who did not receive physostigmine, 54 (8.4%) required intubation and 23 (3.6%) developed rhabdomyolysis.
- Those who received physostigmine as monotherapy had significantly fewer intubations (OR 0.22, p=0.047) than those who received other treatment regimens.

Treatment choice for Anticholinergic Toxicity



CONCLUSION

- Patients with anticholinergic toxicity were more likely to receive benzodiazepines than physostigmine (28.7% vs 12.4%) as monotherapy.
- A significant number of these patients did not receive benzodiazepines, physostigmine, or antipsychotics for their toxidrome.
- The use of physostigmine as monotherapy was significantly less likely to require intubation (OR 0.22 p=0.047).

LIMITATIONS

- We did not know the order of medication given, or the indications for the medications.
- Centers that participate in the ToxIC Case registry may differ from centers that do not, so our results may not be generalizable.
- Some of the information may be incomplete due to changes in the data form as the registry has evolved.

