

UC Davis
Emergency Medicine

Title

Pepper Spray and Tear Gas exposures reported to the California Poison Control System

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INTRODUCTION

- Pepper spray and mace are common items used for personal protection and are common “less lethal” options for law enforcement use for crowd control.
- These agents are irritants with symptoms of exposure ranging from mild pain to potentially permanent ocular injury.
- The recent protests have increased attention on the use of these agents and their potential toxicity.

OBJECTIVES

- To evaluate pepper spray and tear gas exposure calls to the California Poison Control System (CPCS).

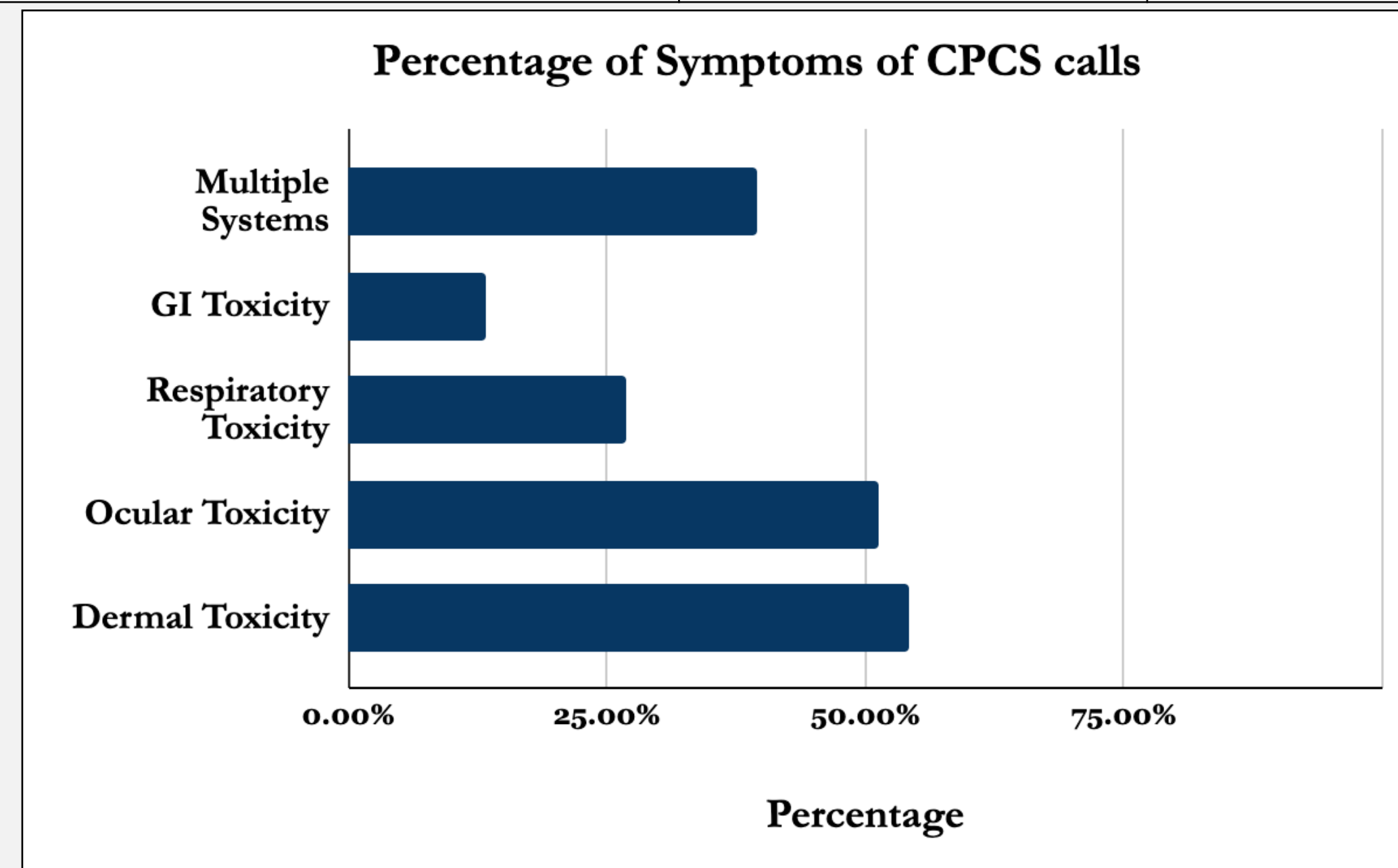
METHODS

- All calls to the CPCS from November 1, 2015 to October 31, 2020 involving pepper spray and tear gas were reviewed.
- Each case was evaluated for substance, symptoms reported, whether irrigation was performed, and if the patient was treated at or referred to a healthcare facility.
- Logistic regression was used to evaluate differences in outcome between law enforcement/military agents and civilian agents.

RESULTS

- A total of 1,705 cases met criteria for inclusion. The most common exposures were to civilian self-defense sprays (N=1,139; 66.8%).
- There were 60 reported exposures to law enforcement/military agents (3.5%).
- Decontamination/irrigation was performed in 93.1% of cases.
- The most reported symptom was dermal irritation (n=926; 54.3%).
- Ocular irritation/injury occurred in 51.4%, airway symptoms occurred in 26.9%, and gastrointestinal symptoms occurred in 13.2%.
- Most patients were treated at the site of exposure (1205 cases, 70.7%).
- There was a trend towards exposures involving law enforcement/military agents requiring treatment at healthcare facility, but this did not reach statistical significance (OR 1.32, 95% CI 0.77-2.27, p=0.33).

Outcome	# of cases	Percentage
Treated on site	1205	70.70%
Treated/Referred to HCF	491	28.80%
Refused referral/AMA	9	0.50%



CONCLUSIONS

- When evaluating calls to the CPCS involving capsaicin-containing products and tear gas, the most reported symptoms were skin irritation and ocular irritation/injury.
- Treatment was primarily supportive with irrigation/decontamination. Most exposures were mild and could be treated outside of healthcare facilities.
- Exposure to law enforcement/military agents may be more likely to need treatment at a healthcare facility.

LIMITATIONS

- Limitations of this study include a lack of long-term outcomes and potential reporting bias due to the nature of poison center data.
- Further study of the long-term effects of these agents is needed to better inform potential policy changes regarding civilian and law-enforcement use.