

Message on the bottle. How does wrong package influence occurrence of caustic and corrosive chemical exposures. Estonian experience.

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The Poisoning Information Centre's objective is to provide adequate advice quickly so as to reduce the incidence of illness, damage to health and death as a result of severe cases of poisoning. Our centres are staffed with internationally trained and highly experienced doctors and nurses working in the fields of emergency medicine, anaesthesia and intensive care.

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Objective

Caustic and corrosive exposures are a worldwide problem. In Estonia primary visits to hospitals due to caustic exposures cost about 25 000 € for national health insurance system every year. There have been 800 primary hospital visits due to caustic/corrosive chemicals exposition over last 10 years per population of 1.3 million people. This retrospective study aims to collect epidemiological data about caustic and corrosive oral exposures in Estonia and establish how big is the role of not original package in causing exposures in different age groups.

Method

Calls to Estonian Poisonings Information Centre (EPIC) from January 2009 to December 2018 were analysed retrospectively in 6 age groups: under 1 year old, 1-3 y, 4-6 y, 7-18 y, 19-69 y and 70 y and older. In each group it was evaluated, whether the substance involved was caustic ($\text{pH} \leq 2$ or $\geq 11,5$) or irritating (pH between 2 - 11,5), was it in original package or not and whether the patient needed to be hospitalized or was referred to home observation.

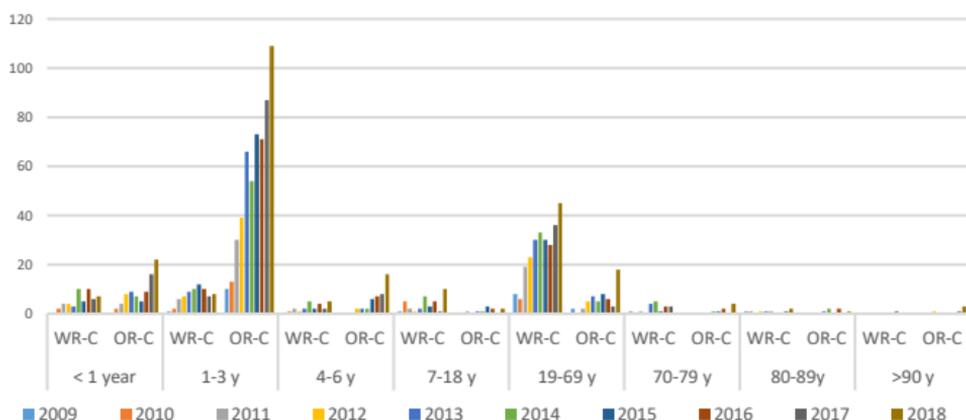


Fig. Caustic and corrosive oral exposures in different age groups and type of package 2009-2018, calls to EPIC (WR-C – wrong container, OR-C – original container)

Results

Overall 1661 inquiries were registered. Exposures to caustic and corrosive chemicals were most common in children from 1 to 3 years - 50,5 % of all inquiries, at the same time being mostly asymptomatic or presenting mild symptoms (80 % referred to home observation, overall 79%).

PH caustic was 28%, irritating 72% of exposures, caustic pH exposures occurring most often in the group older than 70 (57%) and lowest in the group younger than 1 y (16%). The chemicals were in their original package 47% (most often in group 1-3 y - 66%, most rarely in group 19-69 y - 14%), in wrong package 30%, (67% in group 19-69 y, 62% 7-8 y, only 8% in 1-3 y group), package unknown 23%.

Conclusion

Results of the study show, that most affected by wrongly stored chemicals are adults and older children, while children under 3 years old were more attracted by colorful original packages and products reminding toys (detergent pods, toilet refreshers).

Surprising for authors was big part of original package (51%) in under 1 y olds group, who depend mostly on their carers. Probably it could be different if under and over 6 month olds were observed in separate groups. Having such data helped poisoning information centre to target our 2020 poisoning prevention week to vulnerable groups and problematic products. About reasons and products behind poisonings among <1 y olds we continue research this year.