1.1. Acid-Base drops and severe damage to gastrointestinal tract and eyes

Introduction

There are several brands of acid-base drops on the market. These drops are basic mineral concentrates, packed in a dropper bottle, that claim to neutralize and remove excess acid waste from the body. The recommended use is drinking one glass of water with three to five drops 4 -5 times daily (1-3). In the Netherlands there are three manufacturers of acid-base drops, namely AlkaVitae producing Alka® drops, Lucovitaal producing ZuurBase In balance® drops and recently Jacob Hooy producing Zuurbalans® drops.
These three products are on the market as a food supplements and have not been authorized as a registered drug
In 2019 the Netherlands Pharmacovigilance Centre Lareb and the Dutch Poisons Information Centre (DPIC), informed the Netherlands Food and Consumer Product Safety Authority (NVWA) and the Inspectorate for Healthcare and Youth (IGJ) about the serious accidents in association with acid-base drops. At that time 2 reports to Lareb and 55 reports to DPIC were known from which 9 reports concerned a serious eye damage (4). This Signal provides an update of received cases.

Case reported to Lareb (NL-LRB-00729295)

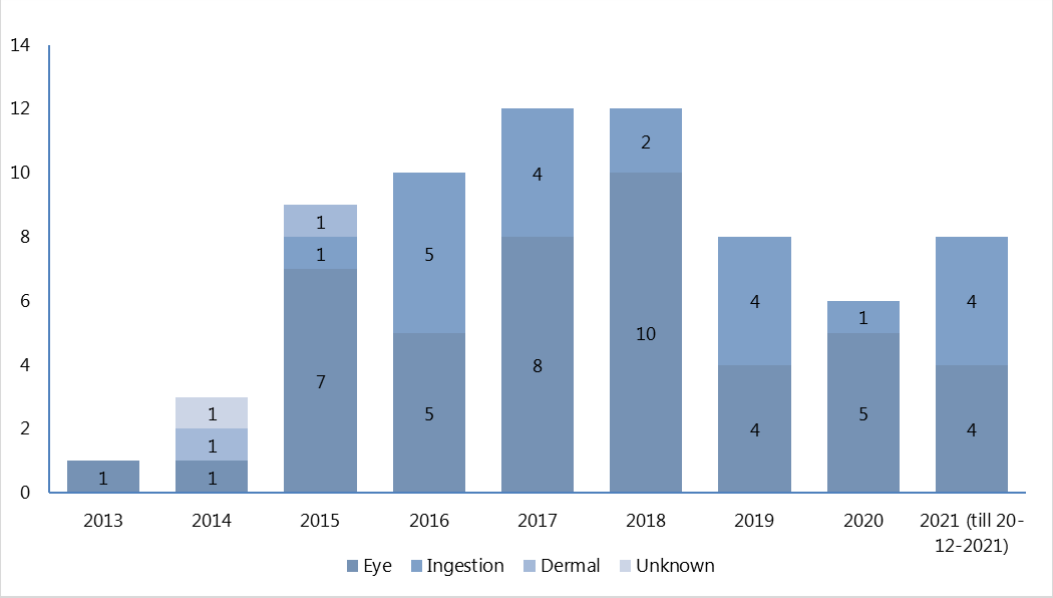
Lareb recently received another serious report from a pediatrician, concerning a 31 months old girl who suffered severe esophageal damage after accidentally administered Alka® drops instead of vitamin D drops. Shortly after ingestion the child vomited and subsequently developed increasing swallowing difficulties (dysphagia). Examination at the hospital revealed local stenosis in the esophagus. The child will probably need long-term hospital treatment. The stenosis must be dilated under anesthesia at short intervals. No other explanation for stenosis was identified, and according to the pediatrician there is no doubt about causality.

Previously Lareb received 2 reports concerning patients who experienced serious eye damage after accidentally exchanging Alka® drops with eye drops they were using at the time. Both reports were submitted by their treating physician. These reports are described in detail in the previous Signal on this topic that Lareb issued (4).

Cases reported to the Dutch Poisons Information Centre (DPIC) (5)

From 2013 up to 20 December 2021 the DPIC has received a total of 69 reports concerning acid-base drops (Table1). In almost all of these reported exposures, local symptoms at the contact site are reported, usually pain, edema / damage to the mucous membranes in the mouth or of the eye. In 45 cases (65%) the acid-base drops were confused with eye drops, leading to (extreme) pain and visual impairment. In 6 cases the DPIC received additional information reporting serious corneal damage. In 21 reports (30%) the damage occurred after ingestion of the undiluted drops. In 12 cases the symptoms can be classified as severe with blisters and/or swallowing difficulties after oral exposure. In most cases, the DPIC is consulted shortly after exposure. In those cases, medical examination has not been performed yet. The number of cases with serious corneal damage or severe symptoms to the mouth and/or throat could therefore be even higher.
The case of the young child described above (Report NL-LRB-00729295) was reported to the DPIC as well. The DPIC was consulted shortly after exposure. At that time, it was reported that the younger sibling had been given the drops as well; not with a spoon but on a piece of fruit. He / she threw the fruit away after tasting it. This child developed blisters on the lips at the time of consultation.

Table1 – Exposures to acid-base drops reported to the Dutch Poisons Information Centre



Product information (6)
Besides zinc, acid / base drops contain high concentrations of sodium hydroxide and potassium hydroxide. The undiluted drops have a pH of around 14 and are very corrosive.

Composition of Alka® drops per 100 mL (1)
Zinc (zinc gluconate) 1.5 mg 15%; acidity regulators (potassium hydroxide, sodium hydroxide (percentages not given), water.
The product information describes the following: "*What you need to know before use (7); Do not drop Alka® Drops undiluted into eyes, mouth or skin.* ***In case of contact (in particular the eyes), rinse well with water. Any wounds or irritations that have arisen will recover automatically.***"

Discussion and conclusion

Acid-base drops are not an evidence-based treatment and can only be used safely if the instructions for use are followed. It is necessary that the information is provided to the consumer through the label and the information available on the website to ensure that accidents can be avoided. Already in 2018 drugstores issued a warning based on DPIC cases. Druggists were made aware of the importance of giving good sales information (8). Lareb informed the NVWA in 2019 about a serious damage after administration of Alka® drops into the eye. The NVWA took action towards the manufacturer AlkaVitae® to ensure that the manufacturer indicates even more clearly how the product should be used The manufacturer has added an extra warning and he modified the shape of the bottle, the volume was increased and a child-resistant closure was also added.The recent report to Lareb and ongoing reporting to the DPIC underline this action is not sufficient to prevent severe chemical damage (wounds) to users. There are different types of products on the market packed in dropper bottles. The risk of this variation in products in dropper bottles is that people mistake and misapply these product Users with impaired vision (elderly, visually handicapped) seem to be especially at risk, because the bottles of the different products look very much alike.
Despite the mounting evidence of harm, these products are still freely available .
Consumers are still in serious danger. Based on the evidence from the received reports the strong alkali are still accidentally used undiluted, resulting in chemical damage. The statement on the website of AlkaVitae® that "*any wounds or irritations that have arisen will recover automatically*" is not true. Ocular contact can lead to severe and permanent corneal damage and undiluted drops in the mouth can lead to severe burns and dangerous swallowing difficulties, as the cases reported to LAREB and the DPIC have shown. Acid / base drops contain high concentrations of sodium hydroxide and potassium hydroxide. The undiluted drops have a pH of around 14 and are very corrosive to all tissues. Therefore, it is necessary to find out which additional options and measures remain to protect consumers against these serious consequences.

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