



IAEM Clinical Guideline 8

Laundry Detergent Capsule Exposure Guideline

Version 1

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DISCLAIMER

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

GLOSSARY OF TERMS

LDC = Laundry detergent capsules

FBC = Full blood count

U&E =Urea and electrolytes

VBG = Venous blood gas

ECG = Electrocardiogram

Coag = Coagulation profile

CXR = Chest x-ray

Laundry Detergent Capsule Exposure Guideline

INTRODUCTION

Laundry Detergent capsules (e.g. Liquitabs) are household domestic products usually packaged as small, brightly coloured concentrated detergent sachets. While manufacturer's contents may vary, the majority of laundry detergent capsules contain a combination of agents, of which include, an anionic detergent (20-30%), a non ionic detergent, propylene glycol (15 – 20%), and ethanol (2 – 5%) and a cationic surfactant. These agents are dissolved in water to form an alkaline solution.^{1,2}

A large UK case series³ has demonstrated the following:

- Most patients are <5 years old (96.1%)
- Exposure to liquid detergent capsule results in
 - Ingestion alone in 80% of cases
 - Eye contact alone in 9% of cases causing
 - Conjunctivitis
 - Eye pain
 - Keratitis
 - Skin contact alone in 1% of cases

Severity of ingestion exposure may range from mild oedema of the arytenoids to ulceration of the oesophagus and gastro-oesophageal junction to subglottic oedema with resulting soft subglottic stenosis at follow up.⁴

Liquid detergent capsule exposure: Symptom, in order of likelihood

1 Vomiting

2 Coughing

3 Nausea

4 Drowsiness

5 Rash

6 Diarrhoea

7 Pulmonary congestion/bronchospasm

8 Stridor

9 Abdominal pain

10 Pharyngitis/ oesophagitis

11 Increased saliva production

12 Chemical burn

PAREMETERS

Target audience

Health-care professionals engaged in the care of infants and children presenting to the Emergency Department.

Patient population

Children 1 to 16 year, with acute exposure to laundry detergent capsules who require immediate assessment and management.

AIM:

To provide an evidence based guideline on the management of paediatric patients presenting to the ED with exposure (splash and ingestion) to laundry detergent capsules

MANAGEMENT OF INGESTIONS

1. Establish history of laundry capsule exposure.
2. Assess, examine and consider the major symptoms as described in the management flow chart.
3. Activated charcoal is contraindicated.
4. Gastric lavage is not recommended.
5. If resuscitation is required, perform an ABC assessment and treat as per APLS guidelines.
6. **Always assess the airway.**
 - If a supraglottic – epiglottic burn is noted, seek expert airway input (anaesthetics) as a priority.
 - If **erythema, oedema and burns** of the mouth, lips or pharynx are present this is usually a sign that further oedema will occur that may lead to airway obstruction. It is an indication for consideration of early intubation.
7. If you have **any concern** there may be airway involvement or ulceration:
 - Do an erect Chest X-ray +/- PFA (supine & decubitus)
 - Erect Chest X-ray is not always possible in the very young.
 - Provide supportive management.
 - Intravenous fluids and analgesia.

- A surgical assessment and consideration for an early endoscopy/ CT are recommended.
- Give broad-spectrum antibiotics if proven perforation.
- The use of antacids, intravenous H2 antagonists or proton pump inhibitors has not been studied in detail but, if given in the early stages they may help to reduce the extent of corrosive injury.

See the rapid reference management flow charts for the management of:

1. [Link to Ingestions management flow chart](#)
2. [Link to Skin exposure management flow chart](#)
3. [Link to Eye exposure management flow chart](#)

NOTE:

Although no cases have been documented, ulceration may be sufficiently severe to cause perforation with complications including mediastinitis, pneumonitis and cardiac injury. The depths of the burns are usually much greater with alkalis, and may continue to develop some time after exposure. The arytenoids, epiglottis and oesophagus are particularly vulnerable to exposure after ingestion.⁶

A decrease in GCS has been documented to occur up to 4-6 hours post exposure.⁵

In patient with GCS of 15:

- Observe for 6 hours and monitor vitals.
- Do a 12 lead ECG to assess QRS and QT intervals.
- Repeat 12 lead ECGs are recommended, especially in symptomatic patients.

In patient with GCS of less than 15:

- Take bloods including FBC, U&E, COAG and VBG.
- Do a 12 lead ECG.

- Complete primary and secondary assessment.

COMPANION DOCUMENTS

[Link to Parent Information Leaflet](#)

[Link to References and Evidentiary Table](#)

LINKS TO USEFUL WEBSITES

1. <https://www.toxbase.org/>
2. <http://www.rch.org.au/clinicalguide>
3. <http://www.alsg.org/uk/APLS>