

PULMONARY ASPIRATION OF A POLYETHYLENE GLYCOL (PEG) - ELECTROLYTE SOLUTION (KLEAN-PREP®)

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Objective

Klean-Prep® is used for intestinal cleansing before diagnostic and therapeutic interventions as well as for whole bowel irrigation after toxic ingestions. We report a case of aspiration pneumonia after administration.



Ingredients:

One bag contains	
PEG 3350	59.000 g
Sodium sulphate	5.685 g
Sodium bicarbonate	1.685 g
Sosium chloride	1.465 g
Potassium chloride	0.742 g
Aspartame, Aroma ingredients	

The content of one bag should be dissolved in one litre of lukewarm water. The ingestion takes place in portions of 250 mL every 10 to 15 minutes (1 litre per hour). Via nasogastric tube 20 to 30 mL per minute should be instilled. A total volume of 4 litres should be administered.

Case PIC Erfurt

Patient: 17-year-old female

Anamnesis:

- recurrent convulsive abdominal complaints

Procedure:

- Administration of Klean-Prep® solution in preparation for colonoscopy via gastric tube. A total volume of four litres should be given in quarter-litres, with the first two litres being instilled within two hours. The conscious patient was not intubated for this procedure.

Clinical feature:

- Slight coughing and dyspnoea occurred after administration of the third portion (total 750 mL; 30 min after start of the procedure).
- Symptoms improved after removing the gastric tube and further drinking the solution. Nevertheless, symptoms reappeared three and a half hours later.

Laboratory findings:

- Arterial Oxygen Saturation 84%
- C-reactive protein max. 50 mg/L
- White Blood Cell Count max. 18.8 Gpt/L

Treatment and course:

- A foamy secretion was siphoned off by **bronchoscopy**.
- Intensive **bronchoalveolar lavage** was carried out to remove remaining aspirated solution.
- Patient was treated with **cefuroxime** and supplementary **oxygen** was given.
- She recovered under this treatment within 7 days.

References:

- de Graaf P, Slagt C, de Graaf JL, et al. Fatal aspiration of polyethylene glycol solution. *Neth J Med* 2006;64:196-198.
- Marschall HU, Bartels F. Life-threatening complications of nasogastric administration of polyethylene glycol-electrolyte solutions (Golytely) for bowel cleansing. *Gastrointest Endosc* 1998;47:408-410.

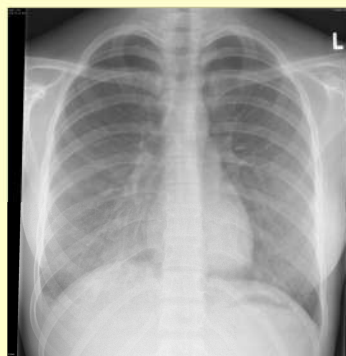
Time course of chest X-ray



4 hours after first symptoms

Evaluation:
Distinct blotchy condensations in the right inferior lobe, also sinistral paracardial incipient as consequence of an aspiration; heart slight.

Feature:
Initial grade of aspiration pneumonia



27 hours after first symptoms

Evaluation:
Declining trend of the basal pulmonary condensations and infiltrations; however little shadow of the right sinus through increased pleural fluid

Feature:
Aspiration pneumonia



3 weeks later

Evaluation:
No pathological changes

Feature:
Normal chest X-ray

Conclusion:

- The nasogastric infusion of PEG electrolyte solution is more often complicated by pulmonary aspiration than oral administration (1). This complication must be taken into account in whole bowel irrigation when the patient cannot or will not take the solution orally (2).
- The aspiration of PEG causes a diffuse mucosal inflammation and interstitial oedema. The absorption of the solution by pulmonary tissue may be delayed as a result of its isotonic constitution.
- Bronchoalveolar lavage should be carried out immediately after aspiration to prevent life-threatening respiratory failure by toxic lung oedema (1, 2).