

## Lesson 4: Gastrografin (2)

# Aims

- Learning the following topics about Gastrografin:
- Oral and rectal dose
- Risks
- High risk patients
- Interactions with other medications
- Interference with diagnostic tests

## Oral dose in children

- For infants and children less than 5 years of age: 30 mL (11 g iodine)
- For children 5 to 10 years of age: 60 mL (22 g iodine)
- These pediatric doses may be diluted 1:1 with water or milk.
- For very young (under 10 kg) and debilitated children the dose should be diluted: 1 part Gastrografin in 3 parts water is recommended.

## Oral dose

- Gastrografin should not be administered to newborns, infants and young children in doses higher than those recommended.
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- Because of its **high osmotic pressure** and the **tendency to absorption from the intestine**

## Oral dose in dehydrated and/or debilitated adults

- **Pediatric doses** may also be used in **dehydrated** and/or **debilitated adult patients**.
- A 1:1 dilution is also recommended when the contrast medium is used in **elderly cachectic individuals**.

# Oral dose of adults

- Adult oral dosage may range from 30 to 90 mL (11 to 33 g iodine)
- Diluted with water (1:1)
- Oral dose of adults depends on:
  - The nature of the examination
  - The size of the patient

## Oral dose in CT

- A usual adult dose is 240 mL of a dilute Gastrografin solution prepared by diluting 25 mL (9.17 g iodine) to one liter with tap water.
- Less dilute solutions [up to 77 mL (28.26 g iodine) diluted to one liter with tap water] may be used when indicated.
- The dose is administered orally about 15 to 30 minutes prior to imaging.

## Dose for enema

- The suggested dilution for adults: 240 mL (88 g iodine) in 1,000 mL of tap water.
- For children over 5 years of age: 90 mL (33 g iodine) in 500 mL of tap water is a suitable dilution.
- For children under 5 years of age: a 1:5 dilution in tap water is suggested.



## Rectal dose

- Therapy of meconium ileus in the newborn:
- Small amounts of Gastrografin solution diluted 1:3 or more are administered under fluoroscopic control.

# Dosage for Gastrografin in combination with barium sulphate

- Adults and children of 10 years of age and over:
- The usual dose of barium sulphate + 30 ml Gastrografin
- Children:
- Children (up to 5 years of age): 2 - 5 ml Gastrografin to 100 ml barium sulphate suspension
- Children (from 5 – 10 years of age): 10 ml Gastrografin to 100 ml barium sulphate suspension

## Gastrografin + barium sulphate

- If Gastrografin is used together with barium sulphate, attention must be drawn to the .....
- contraindications
- warnings
- possible side effects

# Risks

- Anaphylactoid/hypersensitivity reactions
- Other idiosyncratic reactions:
- Cardiovascular
- Respiratory
- Cutaneous
- Severe reactions including shock

# Allergy-like hypersensitivity

- Nausea, Vomiting
- Mild angioedema
- Conjunctivitis
- Coughing
- Pruritus
- Rhinitis
- Sneezing
- Urticaria

# Hypersensitivity reactions

- If hypersensitivity reactions occur:
- Administration of the contrast medium must be discontinued immediately.
- If necessary, specific therapy instituted via a venous access.
- Medication for the treatment of hypersensitivity reactions as well as preparedness for institution of emergency measures are necessary.

## Important point

- Particularly careful consideration is essential in the case of:
- Hypersensitivity to iodinated contrast media
- Dehydrated patients
- Babies
- Young children

## Other high risk categories

- The risk of anaphylactoid/hypersensitivity reactions is higher in the case of:
- Any history of allergic disorders
- History of bronchial asthma
- A previous anaphylactoid/hypersensitivity reaction to iodinated contrast media



## Other high risk categories ...

- Patients taking beta blockers
- Patients with cardiovascular disorders
- Thyroid dysfunction
- Severe cardiovascular disease
- Very poor state of health

Patients with cardiovascular disorders are more susceptible to serious or even fatal outcomes of severe anaphylactoid/hypersensitivity reactions.

# Neonates

- In neonates, specially preterm infants, who have been exposed to Gastrografin, either through the mother during pregnancy or in the neonatal period, it is recommended to monitor thyroid function.
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- An exposure to excess iodine may cause hypothyroidism, possibly requiring treatment.

## Important points

- In case of prolonged retention of Gastrografin in the gastrointestinal tract (e.g. obstruction, stasis), tissue damage, bleeding, bowel necrosis and intestinal perforation may occur.
- Gastrografin must not be mixed with other medicinal products.

# Interactions with other medicines

- Beta-blockers:
- Hypersensitivity reactions can be aggravated in patients on beta-blockers, particularly in people with bronchial asthma.
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- Patients may be resistant to treatment of anaphylactoid/hypersensitivity reactions with beta agonists.

# Interactions with other medicines ...

- Interleukin-2:
- Previous treatment (up to several weeks) with interleukin-2 is associated with an increased risk of delayed reactions to Gastrografin.

# Interference with diagnostic tests

- Radioisotopes:
- May be impeded for up to several weeks (2 weeks and sometimes up to 6 weeks) after administration of iodinated contrast agents.
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- Due to reduced radioisotope uptake

# Summary

- Oral and rectal dose
- High risk patients
- Interactions with other medications
- Interference with diagnostic tests

# Reference

- GASTROGRAFIN- diatrizoate meglumine and diatrizoate sodium liquid, Bracco Diagnostics Inc
- Health Products Regulatory Authority, Summary of Product Characteristics, 2019, 1-9.
- <https://www.medicines.org.uk/emc/medicine/1820#gref>