Hilla university collage

special procedures of GIT

Second stage

By:

Layth Kareem

Ms.c Degree in MRI applications

The student should learn at the end of this lecture

What is the contrast media?

Ionic and non-ionic

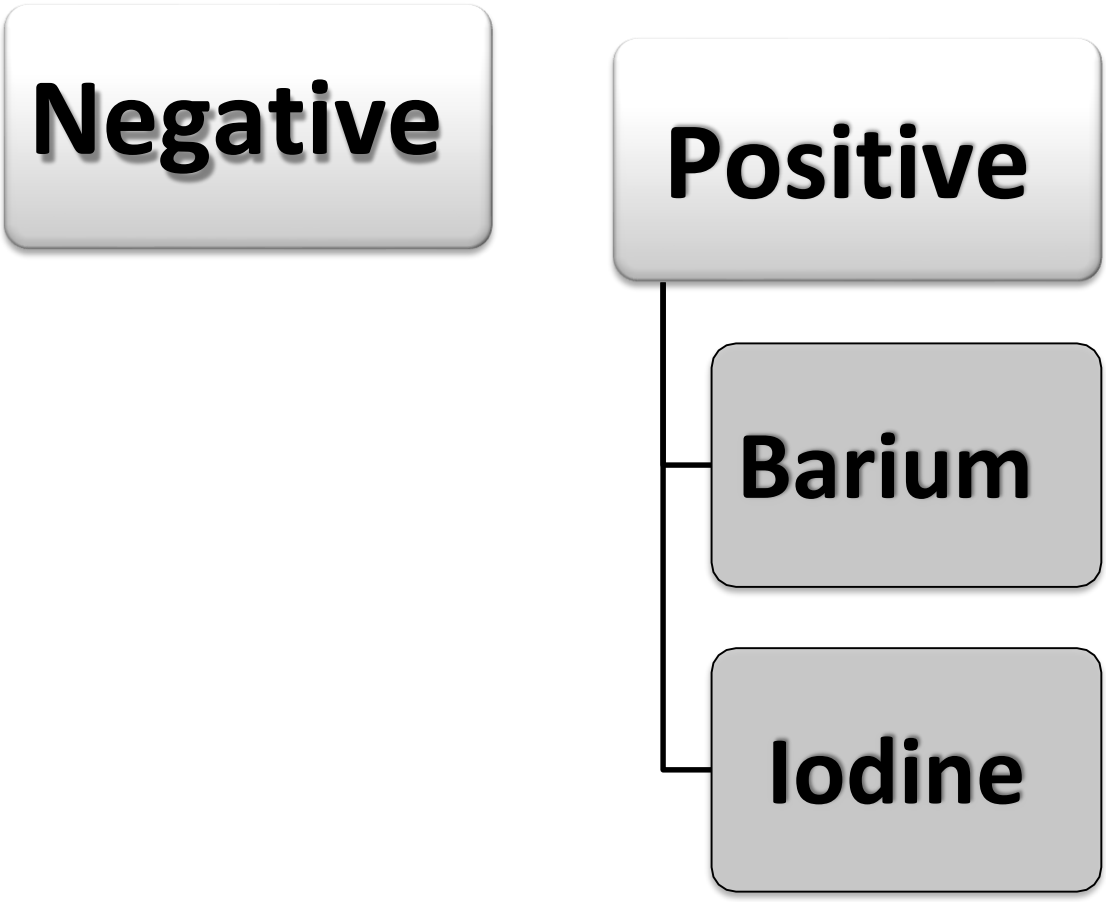
Barium (advantage and dis advantage)

Water soluble contrast media

Contrast Media

Contrast Media: Enhance subject contrast in a tissue that normally has low contrast

- **Contrast Media: Increases atomic number of targetedarea**
- **Contrast Media: uses some substance (barium, iodine orair) to increase the contrast of an image.**



(+ve) VS (-ve) Contrast Media

Positive contrast medium (+ve) (e.g. the use of iodinated contrast) absorbs x-rays more stronglythan the tissue or structure being examined

while

Negative contrast medium (-ve) (e.g. the use ofair) are less strongly.

Positive(contrast) **negative (without contrast)**

***

(+ve) VS (-ve) Contrast Media

Negative contrast	Positive contrast
	Barium or Iodine
• (AIR or CO_2)	
• Radiolucent	• Radiopaque
• Low atomic material	• High atomic material
• Black on film	White on film
• Penetrates X-rays	Absorbs X-ray

Positive Contrast Media

Barium **iodine**

none water soluble	Water soluble
GI tract only ingested or rectally	intravenous (**IV**) intrathecal or GI tract

Barium sulfate

Never used through blood stream injection**!!**

Micronized Barium (BaSO4)

Because it's insoluble substance also it can block the vessels

Barium Sulfate Uses

Thin Barium for Esophogram (Ba. Swallow),

Ba. Meal and follow through (Small Bowel)

- Thick Barium for Lower GI (Barium Enema)
- Ba = barium sulfate

Side effects of barium sulfate

1. May cause allergy
2. Difficulty in evacuation
3. Extravasation of contrast in to the perforation results extensive fibrosis & peritonitis

the iodinated contrast media have 3 calcifications:

1.Water – Insoluble = barium sulphate

2.Water soluble (water based) = have two type ionic + non ionic

4. oily contrast media = used in HSG +

iodine water based contrast

ionic VS non- ionic

Before we start, we have an important definition we must know it

Osmolality is a test that measures the concentration of all chemical particles found in the fluid part of blood.

Ionic

High osmolar contrast agent (HOCA) that mean this substance have high concentration

- ❑They are organic acids
- ❑They are in clinical use since 1950s.
- ❑Examples: (Hypaque), (Conray)
- ❑More patient allergic reactions

Non – ionic

Low osmolar contrast agents (LOCA)

- ❑Have a lower incidence of adverse reaction
- ❑In clinical use since 1986.
- ❑Higher cost than HOCA.
- ❑Examples: (Omnipaque), (Ultra**vist)**
- ❑Less patient allergic reactions

How safe are contrast materials?

Contrast materials are safe drugs; adverse reactions ranging from mild to severe do occur, but severe reactions are very uncommon. While serious allergic or other reactions to contrast materials are rare, radiology departments are well equipped to deal with them.

Patient preparation before contrast media

Because contrast materials carry a slight risk of causing an allergic reaction or adverse reaction, you should tell your doctor about: allergies to contrast materials, food, drugs, dyes, preservatives, or animals' medications you are taking, including herbal supplements recent illnesses, surgeries, or other medical conditions history of asthma and hay fever history of heart disease, diabetes, kidney disease, thyroid problems or sickle cell anemia.

Dangerous side effect

Tell your doctor immediately about any of these symptoms:

1. hives
2. itching
3. red skin
4. swelling of the throat
5. difficulty breathing or swallowing
6. hoarseness
7. agitation
8. confusion
9. fast heartbeat
10. bluish skin color
11. difficulty breathing
12. cardiac arrest
13. profound low blood pressure

Contraindication of use (barium& water soluble)

1. history of asthma **(water soluble)**
2. allergic reaction of barium **(barium)**
3. severely dehydrated, which may cause severe constipation**(barium)**
4. an intestinal blockage or perforation that could made worse by a barium-sulfate agent**. (barium)**