

Adverse Radiopaque Contrast Reactions

🕒 Expires Tuesday, February 28, 2023 📁 Radiology

👤 Theresa D. Roberts, MHS, RT(R)(MR); Craig V. Towers, M.D., FACOG

Examination

- 1. An adverse drug reaction is an undesired and sometimes harmful response to a medication. It is estimated that between _____ adverse drug reactions occur yearly in the United States.**
 - a. 10 and 20 thousand
 - b. 100 and 200 thousand
 - c. 1 and 2 million
 - d. 10 and 20 million
 - e. 100 and 200 million

- 2. The aging process**
 - a. does not change the way the body absorbs a drug
 - b. makes things less complicated when administering radiographic contrast agents
 - c. does not change the way the body metabolizes a drug
 - d. changes the way the body excretes drugs
 - e. is not an issue regarding the administration of radiologic contrast agents

- 3. All of the following disease processes can predispose patients to a greater risk when administering radiographic contrast agents EXCEPT**
 - a. cardiac disease
 - b. pheochromocytoma
 - c. history of allergies
 - d. diabetes
 - e. aplasia cutis congenita

- 4. Which of the following statements is FALSE?**
 - a. Diagnostic procedures, which involve the use of radiopaque contrast agents, should be carried out under the direction of medical professionals with prerequisite training and thorough knowledge of the appropriate protocol for the procedure to be performed.
 - b. All orders must be closely checked and questioned when unclear or if they seem to be inappropriate.
 - c. Radiology Professionals are not mandated to act as a patient advocate. Administering contrast agents "because the doctor ordered it that way" or "because it is the protocol" could serve as a legal defense if the patient experiences a negative outcome.
 - d. The radiology professional is responsible for being knowledgeable regarding the appropriate dosage for the radiopaque agent administered.
 - e. The radiology professional is responsible for being knowledgeable regarding the integrity of the contrast medium and indications for the radiopaque agent administered.

- 5. Which of the following radiographic contrast agents would most likely be used for pediatric angiocardiology?**
 - a. Diatrizoate Meglumine
 - b. Iopamidol
 - c. Glucagon
 - d. Gadopentetate Dimeglumine
 - e. Gadoteridol

6. Which of the following radiographic contrast agents would most likely be used to relax the smooth muscle of the stomach, duodenum, small bowel, and colon?
- Diatrizoate Meglumine
 - Iopamidol
 - Glucagon
 - Gadopentetate Dimeglumine
 - Gadoteridol
7. Which of the following radiographic contrast agents would most likely be used for Magnetic Resonance Imaging to enhance the brain, spine, and surrounding tissues?
- Diatrizoate Meglumine
 - Iopamidol
 - Glucagon
 - Barium Sulfate
 - Gadoteridol
8. Which of the following statements is TRUE?
- In general terms, the human body has a group of cells that belong to the immune system. The basic cells are labeled IgG and IgM.
 - T-4 cells are called the killer-suppressor cells.
 - The B-cells actually produce the antibodies or immunoglobulins that are found in our bodies.
 - The T-8 cell is called the helper-inducer cell and is the "captain" of the ship.
 - Regarding cell distribution, the T-8 cells account for 70% of the T-cell population and the T-4 cells account for the remaining 30%.
9. When cells die, substances are released into the body that produce further reactions and symptoms. These may include all of the following EXCEPT
- histamine
 - cytokines
 - platelet-activating factor
 - prostaglandin
 - thyroglobulin
10. Which of the following statements is TRUE?
- When a drug produces a typical allergic reaction through the immune system it usually involves IgM antibodies.
 - IgE-dependent drug reactions can be immediate or accelerated.
 - The "immediate" reactions occur hours to days after the drug is administered and usually involve urticaria and occasionally laryngeal edema.
 - "Accelerated" reactions usually occur within minutes and can include itching, rashes, nausea, vomiting, bronchospasm, shock and even death.
 - When a drug produces a typical allergic reaction through the immune system, it usually involves IgG antibodies.
11. Some of the ways a drug can produce a response through non-immunologic means include all of the following EXCEPT
- By direct release of irritating substances from certain cells in the body.
 - Through cumulative effects and overdosage.
 - Through exacerbating a pre-existing condition in the person.
 - By activating the IgE immune system.
 - By interaction with other drugs.
12. Which of the following statements is TRUE?
- Non-immunologic drug reactions are actually responsible for the majority of drug reactions that occur.
 - Some drugs may cause the release of histamine, cytokines, and enzymes from cells but they always need the help of antibodies.

- c. The common ways in which drugs can interact with each other is by directly binding together, thereby producing a stronger substance.
- d. Fortunately, drugs will not interfere with enzyme pathways.
- e. Though drugs can produce an immunologic response, patients with lupus or rheumatoid arthritis have no higher concern than the general population.

13. Regarding adverse reactions, which of the following statements is TRUE?

- a. The possibility of a reaction (mild to severe) should always be considered.
- b. The degree of severity and type of onset is not patient dependent.
- c. Patients with known or questionable histories of sensitivity to radiopaque contrast agents should not be given a pre-medication to minimize the risks of reaction.
- d. Unfortunately, there is no way to minimize the risk of acute renal failure following the administration of a contrast agent.
- e. For patients with a known history of sensitivity to radiopaque contrast agents, they should be pre-medicated with ampicillin to minimize the risks.

14. Examples of cardiovascular reactions include all of the following EXCEPT

- a. hypotension
- b. hypertension
- c. tachycardia
- d. tingling in an extremity
- e. angina pectoris

15. Nervous system reactions can include all of the following EXCEPT

- a. a burning sensation
- b. a tingling sensation in an extremity
- c. pain
- d. excessive sweating
- e. vasovagal reaction of the vagus nerve

16. Respiratory tract reactions include

- a. anorexia
- b. bronchial constriction
- c. urticaria
- d. taste alterations
- e. a feeling of warmth

17. Anaphylaxis is a severe hypersensitivity reaction to a causative agent or agents. Which of the following statements is TRUE?

- a. Anaphylactic reactions cause large quantities of histamine to be released, which in turn causes an increase in capillary permeability
- b. Anaphylactic reactions cause large quantities of histamine to be released, which in turn causes widespread constriction of arterioles and capillaries.
- c. Another organ that can be affected is the nervous system resulting in severe shortness of breath.
- d. One of the treatments for this disorder is epinephrine, which dilates the constricted blood vessels and helps to constrict the bronchial tree.
- e. Some of the symptoms can be treated with a decongestant such as Benadryl.

18. All of the following statements are true EXCEPT

- a. The radiographer should identify allergy histories and make a list of drugs or foods that the patient is allergic to with a description of the "reaction" that occurred.
- b. The radiographer should identify incompatibilities.
- c. The radiographer should correctly prepare the agent to be administered.
- d. The radiographer should perform adequate monitoring after the drug is administered.

e. The radiographer should obtain the drug from the pharmacy in person.

19. All of the following statements are true EXCEPT

- a. The patient should be educated regarding the administration of drugs for the procedure(s) they are about to undergo.
- b. Because radiographic contrast agents are bacteriostatic, use of sterile technique is not indicated.
- c. Carefully look at drug labels and be mindful of expiration dates.
- d. Always remember to confirm IV functioning before administering agents.
- e. Always remember to confirm tube placement before administering agents.

20. All of the following statements are correct EXCEPT

- a. The administration of a radiopaque contrast agent can only cause an anaphylactic reaction if the patient has received the contrast in the past.
- b. Observe the recommended dosage prior to drug administration.
- c. Observe the recommended drug injection rates.
- d. Use prescribed directions for making solutions
- e. It is important to avoid contamination of sterile agents

