

Delayed Reactions to Iodinated Contrast Agent: More Common But Less Recognized

In recent days, iodinated contrast agents are one of the most commonly prescribed drugs and have contributed significantly in the phenomenal growth of radiology in the present era. All currently available contrast media are chemical modifications of a 2,4,6-tri-iodinated benzene ring and commonly classified on the basis of osmolality into high osmolality agents (diatrizoate anion as Renografin®, Hypaque®, Conray®) and low osmolality agents which are sub-classified into non-ionic monomers (Omnipaque®, Ultravist®, Optiray®), ionic dimers (Hexabrix®) and non-ionic dimers (Visipaque®). These contrast agents are usually safe, and adverse reactions are generally mild and self-limiting. Nonetheless, severe or life-threatening reactions can occur. These adverse reactions are classified as immediate (occurring within 01 hour of injection) and delayed (after 01 hour to 1 week). Immediate reactions are either allergic type reactions just like anaphylactoid or chemotoxic effects like seizure, arrhythmia or pulmonary edema. Reported incidence of immediate reactions is 0.6% and mostly are of mild intensity. Delayed reactions include urticaria (mild to severe), nasal congestion, facial edema or anaphylactoid shock. Reported incidence of delayed reactions is significantly higher (2.3-13%) than immediate reactions but are less acknowledged or recognized. The fundamental reason for this lack of attention is their occurrence when they are out of radiology department and tendency to falsely ascribe them to other drugs. However one must not ignore that these delayed reactions are problematic because the patient is usually without medical supervision. Most of these delayed adverse reactions are skin manifestations and contrast medium is reported to be the third most common cause of drug induced skin reactions. These skin reactions are typically macular to maculopapular exanthema and likely T-cell mediated. Patients often develop these reactions after all of contrast medium, having a biological half-life of 1.5 hours, is cleared from their system. Risk factors associated with delayed reactions are past history of such reaction or allergy to other agents, asthma, female gender and progressive systemic lupus erythematosus. Dimeric groups of contrast agents are reported to cause more delayed reactions than monomeric agents. The American College of Radiology (ACR) elucidates that majority of delayed reactions are self-limiting and require no or minimal treatment. For moderate to severe reactions, a symptomatic management is recommended. However, in rare severe reactions, patient must be referred to an emergency room. As a matter of fact, financial impact of delayed reactions is greater than immediate reactions. But most challenging aspect of finding the real financial impact in term of digits is the lack of reliable data about the true incidence of delayed contrast media reactions. Large prospective multicenter studies are required to address this important aspect. It is one of the primary objectives of the radiologists to enhance the awareness about the delayed contrast reactions among staff, referring physicians and patients as well. This would indeed help to avoid repeat reactions, selection of a safer contrast medium and reduction in expected medical cost associated with management of these delayed reactions.

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