Radiographic Contrast Media (RCM)

- RCM is *clear* not a dye like methylene blue or indocyanine green
- Immediate generalized (pseudoallergic) reactions = Anaphylactic
- Onset of reactions is within 20 minutes; usually within 1-3 minutes of an intravascular injection…. Definition < 1 hour
- Incidence of reactions to lower osmolality RCM 0.5% vs 2-3% with older RCM
- Severe life-threatening reactions 0.04% with lower osmolality RCM vs. 0.22% with older RCM
- Deaths do occur with both, and volume of RCM can be < 10 mL
- There remains the myth of a relationship between shellfish allergy (IgE), “iodine” allergy from rashes from the anti-septic povidone-iodine skin prep, and increased risk of anaphylaxis from RCM.
- Asthma may indicate an increased likelihood of a reaction
Skin Testing to Identify Reactors?

- “Skin testing appears to be a useful tool for diagnosis....” (Allergy 2009;64:234-41). Most accurate if tested from 2-6 months after a reaction. Positive tests in 50% of immediate reactors and 47% of non-immediate (> 1hr)

- “Preliminary ID skin testing with contrast agents is not predictive of adverse reactions, may itself be dangerous, and is not recommended.” (ACR Manual on Contrast Media Version 8, 2012)
Pretreatment for Prevention of Repeated Reactions to RCM
JACI 1991;87:867-72

- Prednisone 50 mg
  - 13 hours, -7 hours, -1 hour
- Diphenhydramine 50 mg
  - 1 hour

Lower osmolality RCM
Have emergency therapy available
Is there a good indication for RCM?
If Previous Reaction

• To higher osmolality RCM  17-60%
  With pretreatment.......4%

• To lower osmolality RCM  4.1-5.5%
  With pretreatment.......0.5-1%

(JACI 1991;87:867-72)
Beta Blockers and RCM Reactions

• No increased incidence with Beta Blockers or protection with Ca channel antagonists in a prospective series

• JACI 1987;80:698-702
Pathogenesis

• Mediator release from basophils and mast cells (even in absence of clinical reactivity)
• Activation of contact system-Factor XII leading to bradykinin production; complement activation; conversion of L-arginine to NO; development of “pseudoantigens.”
• Immunologic mechanism identified by immediate and patch skin testing