Teaching Module III
Delayed reactions to intravascular iodinated contrast media
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Delayed adverse reactions

- Develop more than one hour but within 7 days of contrast injection
- Mild or moderate in most cases

Types

- Non-specific symptoms
- Skin reactions
Non-specific delayed reactions

• Flu-like illness

• Arthralgia, aches and pains

• Parotitis

• Fever

• Abdominal pain

• Headache
INCIDENCE OF NON-SPECIFIC DELAYED REACTIONS

Difficulty of verifying that these non-specific adverse events occurring many hours after contrast administration are directly caused by CM.
INCIDENCE OF NON-SPECIFIC DELAYED REACTIONS

- CT with IV CM enhancement  12.5%
- CT without CM enhancement  10%

Yasuda et al., Invest Radiol 1998; 33:1-5
DELAYED ALLERGY-LIKE REACTIONS TO CM WITH SKIN MANIFESTATIONS

Incidence

• 0.5-1% with ionic CM and non-ionic monomers

• 2-4% with non-ionic dimers
DELAYED ALLERGY-LIKE REACTIONS TO CONTRAST MEDIA

• Types of skin reactions
  • Maculopapular
  • Exanthematous
  • Urticaria
  • Angioedematous

• Appear 3 h to 2 days post contrast injection

• Often disappear within a week
Erythema

Angioedema

Urticaria
Böhm et al., Eur Radiol 2006

Macropapular exanthema

Erythema
DELAYED ALLERGY-LIKE SKIN REACTIONS TO CONTRAST MEDIA

Predisposing factors

• Previous contrast medium reaction

• History of allergy

• Interleukin-2 treatment

• Being of Japanese descent
DELAYED ALLERGY-LIKE SKIN REACTIONS TO CONTRAST MEDIA

Mechanism

• Increasing evidence that these reactions are T-cell mediated (Type VI delayed hypersensitivity reaction)
• Skin testing with the culprit agent produce delayed reaction

• Cross reactivity between different contrast media may occur

• Lymphocyte-rich dermal perivascular infiltrate with eosinophils on skin biopsy

Lerch et al., J All Clin Immunol 2007
Skin testing
Tell patients who have had a previous contrast medium reaction or who are on interleukin-2 treatment that a late skin reaction is possible and that they should contact a doctor if they have a problem.
Treatment

• Antihistamine

• Corticosteroids

• Severe cases require referral to a dermatologist
Conclusion

- Delayed reactions are mainly mild, develop from 1 to 7 days after CM administration and resolve within 3 to 7 days in the majority of cases
- Majority of skin reactions are T-cell mediated reactions
- Management is symptomatic and similar to the management of other drug-induced skin reactions