



Clinical Pharmacology & Toxicology Pearl of the Week

~ SCARs: Drug Reaction with Eosinophilia and Systemic Symptoms~

- ✓ DRESS (or Drug Induced Hypersensitivity Syndrome, DIHS) is a severe hypersensitivity reaction to a medication and/or its metabolites.
- ✓ It can occur anywhere from 2-6 weeks following drug exposure.
- ✓ Mortality is 10-15% in those affected.
- ✓ It is thought to arise from:
 - host genetic predisposition
 - immune activation by culprit drugs
 - alterations in drug metabolism
 - drug-induced viral reactivation (HHV-6)
- ✓ The most common drugs include:
 - Antiepileptics: carbamazepine, phenytoin, lamotrigine
 - Antibiotics: trimethoprim-sulfamethoxazole, minocycline, dapsone
 - Other: allopurinol, abacavir, sulfasalazine
- ✓ The reaction often starts with fever.
- ✓ Most common initial skin sign is a morbilliform or maculopapular “measles-like” rash (image 1). This often progresses to exfoliative dermatitis. Nikolsky’s sign is absent. Other skin findings may include lymphadenopathy, periorbital or facial edema.
- ✓ Hematologic abnormalities include eosinophilia, atypical lymphocytosis, neutrophilia, neutropenia, thrombopenia, anemia.
- ✓ Hepatobiliary, renal, pulmonary, cardiac, neurologic, gastrointestinal and endocrine systems can be affected.
- ✓ The diagnosis is clinical, using one of three scoring systems: RegiSCAR, Boquet or J-SCAR
- ✓ Differential diagnosis includes:
 - Other drug-related reactions: Stevens-Johnson Syndrome, Toxic Epidermal Necrolysis, Acute Generalized Exanthematous Pustulosis and Hypereosinophilia
 - Viral infections: Epstein-Barr virus, Cytomegalovirus
 - Rheumatologic: Adult-onset Stills Disease
 - Graft-Versus-Host disease
- ✓ Treatment involves stopping the culprit drug, supportive measures, symptom control and initiation of corticosteroids for severe disease with organ involvement.
- ✓ Patients should be monitored for the complication of hypothyroidism for up to two years following diagnosis of DRESS.

References:

1. Behera, SK et al (2018). DRESS syndrome: a detailed insight. Journal of Hospital Practice. Vol 46:3, p.152-162.
2. Zain Husain et al (2013). DRESS syndrome: Part I. Clinical perspectives. Journal of the American Academy of Dermatology. Vol 68 (5): 1-14.



Image 1: Morbilliform rash seen in DRESS. From aneskey.com

The Clinical Pharmacology (CP) physician consultation service is available Mon-Fri, 8am-5pm. The on-call physician is listed in ROCA on the AHS Insite page. CP consultations are also available through Netcare e-referral and Specialist Link. You can also find us in the [Alberta Referral Directory](#) (ARD) by searching “Pharmacology” from the ARD home page. Click [HERE](#) for more details about the service.

The Poison and Drug Information Service (PADIS) is available 24/7 for questions related to poisonings. Please call 1-800-332-1414 (AB and NWT) or 1-866-454-1212 (SK). Information about our outpatient Medical Toxicology Clinic can be found in [Alberta Referral Directory](#) (ARD) by searching “Toxicology” from the ARD home page.

More CPT Pearls of the Week can be found [HERE](#).

Created: October 30, 2024

Reviewed: March 14, 2025