



## Clinical Pharmacology & Toxicology Pearl of the Week

### DRESS: Drug Reaction with Eosinophilia and Systemic Symptoms

- ✓ DRESS 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
- ✓ Most common initial sign is a morbilliform or maculopapular “measles-like” rash (image 1)
- ✓ Hematologic, hepatic, 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 Still's 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.



Image 1: Morbilliform rash seen in DRESS



The Calgary Clinical Pharmacology physician consultation service is available Mon-Fri, 9am-5pm. The on-call physician is listed in ROCA. Click [HERE](#) for clinical issues the CP service can assist with.



The Poison and Drug Information Service (PADIS) is available 24/7 for questions related to poisonings. Please call 1-800-332-1414, and select option 1.

### References:

1. Behera, SK et al (2018). DRESS syndrome: a detailed insight. Journal of Hospital Practice. Vol 46:3, p.152-162.
2. Image 1. Retrieved on December 4<sup>th</sup>, 2018 from: <https://aneskey.com/rash-drug-eruptions/>
3. Zain Husain et al (2013). DRESS syndrome: Part I. Clinical perspectives. Journal of the American Academy of Dermatology. Vol 68 (5): 1-14.