Drug Reaction With Eosinophilia and Systemic Symptoms

Drug reaction with eosinophilia and systemic symptoms (DRESS) is a reaction to a medication.

It affects adults and children and can be associated with harm or even death. It usually occurs 2 to 8 weeks after beginning to take a medication. Around 1 in 1000 people taking specific drugs develop DRESS.

**Signs and Symptoms**
The skin rash, which usually starts as numerous red flat to slightly raised spots, is often the first sign of DRESS, in addition to fever. The rash can spread to involve large areas of your body, including the trunk, arms, and legs. Most people have substantial swelling of the face. Your lips can become dry and cracked, but severe sores inside your mouth, eyes, anus, or genital area are uncommon. Lymph nodes in your neck and other areas may also become swollen. There can be inflammation of major organs, like the liver or kidneys.

**Causes of DRESS**
Although you may be taking several drugs at the time symptoms start, DRESS is usually caused by a single medication. Drugs that commonly cause DRESS include those used to treat seizures (eg, lamotrigine, phenytoin, carbamazepine), infections, common skin conditions like acne (eg, vancomycin, trimethoprim-sulfamethoxazole, minocycline), and gout (eg, allopurinol).

**Diagnosis**
A health care clinician will ask about your symptoms and recent medications initiated within the last 2 months and perform a physical examination. Blood tests are drawn, and a skin biopsy may be performed. Blood test results often show elevated counts of white blood cells called eosinophils and may show evidence that the liver or kidneys, or rarely other organs, such as the heart, have been affected.

**Treatment**
The first step is to stop taking the medication that caused DRESS. Your physician will advise you on how to do this, and if the culprit drug is unclear, sometimes multiple medications are discontinued. You may have to be in the hospital as you are treated for this condition. In mild cases, steroid creams are applied to your rash. For a more severe rash or when organs are involved, oral or intravenous medications that dampen your immune system (eg, corticosteroids, cyclosporine) might be used. To prevent DRESS from coming back, treatment is decreased slowly over several weeks to months.

**Follow-up Care and What to Expect**
When you have recovered, an allergy or skin physician may do special allergy testing called patch testing to help determine which drug caused DRESS. For patch testing, physicians remove the medications after 48 hours and check your skin for any positive reactions. Genetic blood tests may also be helpful.

Your physicians will educate you on which medication(s) to avoid in the future to prevent DRESS from recurring. You also need to inform your pharmacy and all health care clinicians, as it essential to permanently avoid all suspected and similar medications. After recovery from DRESS, you could be at an increased risk for autoimmune diseases (eg, thyroid disease) and mental health complications (eg, anxiety, depression, and posttraumatic stress disorder). Therefore, you should have regular clinic checkups and blood tests for 5 years after your initial presentation with DRESS syndrome.

**Possible signs and symptoms**
- Fever
- Elevated white blood cell count (eosinophilia)
- Lymph node swelling
- Major organ inflammation (liver, kidneys, heart)

**Widespread rash**
(face, trunk, arms, legs)

**Facial swelling**

**Red or purple flat to slightly raised spots**

**DRUGS THAT COMMONLY CAUSE DRESS SYMPTOMS**
- Seizure drugs
  - Lamotrigine
  - Phenytoin
  - Carbamazepine
- Infection or common skin treatments
  - Vancomycin
  - Trimethoprim-sulfamethoxazole
  - Minocycline
- Gout treatment
  - Allopurinol

**TREATMENT UNDER PHYSICIAN SUPERVISION**
- Stop taking known culprit drug or suspected drugs started in the last 2 to 8 weeks
- For mild cases, steroid creams may be used; for severe cases, oral or intravenous immunosuppressant drugs may be needed
- Frequent follow-ups with medical specialists needed

**FOR MORE INFORMATION**
DRESS Syndrome Foundation
https://www.dresssyndromefoundation.org/

To report a potential DRESS case

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