



DRUG ERUPTIONS

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A drug eruption is an adverse skin reaction to a drug. Many medications can cause reactions, especially antimicrobial agents, sulfa drugs, NSAIDs, chemotherapy agents, anticonvulsants, and psychotropic drugs. Drug eruptions can imitate a variety of other skin conditions and therefore should be considered in any patient taking medications or that has changed medications. The onset of drug eruptions is usually within 2 weeks of beginning a new drug or within days if it is due to re-exposure to a certain drug. Itching is the most common symptom. Drug eruptions occur in approximately 2-5% of hospitalized patients and in greater than 1% of the outpatient population. Adverse reactions to drugs are more prevalent in women, in the elderly, and in immunocompromised patients.

Drug eruptions may be immunologically or non-immunologically mediated. There are 4 types of immunologically mediated reactions, with Type IV being the most common. Type I is immunoglobulin-E dependent and can result in anaphylaxis, angioedema, and **urticaria**. Type II is cytotoxic and can result in purpura. Type III reactions are immune complex reactions which can result in **vasculitis** and type IV is a delayed-type reaction which results in **contact dermatitis** and photoallergic reactions. This is important as different medications are associated with different types of reactions. For example, insulin is related with type I reactions whereas penicillin, cephalosporins, and sulfonamides cause type II reactions. Quinines and salicylates can cause type III reactions and topical medications such as neomycin can cause type IV reactions. The most common drugs that may potentially cause drug eruptions include amoxicillin, trimethoprim sulfamethoxazole, ampicillin, penicillin, cephalosporins, quinidine and gentamicin sulfate.

A complete medical history and a thorough review of the patient's medication list including over-the-counter drugs such as vitamins, herbs, minerals, and other homeopathic regimens are important in working up a diagnosis. It is also essential to note the time between the introduction of a drug and onset of the eruption along with the route and dose of the drug taken. Previous adverse reactions to any medications should also be noted.

Drug eruptions have a wide range of morphological features although the majority of patients present with a generalized exanthematous or morbilliform eruption. Other physical manifestations include acneiform papules and pustules where comedones are absent, alopecia, tenderness and redness on the palms and soles, target lesions seen in **erythema multiforme**, tender, erythematous nodules seen in **erythema nodosum** and round, violaceous plaques that fade with macular hyperpigmentation as seen in fixed drug eruptions. Wheals may be seen in an urticarial-type of drug eruption and tender erythematous papules and plaques may be seen in drug-induced **Sweet's syndrome**. It is important to check for certain features that may indicate a potentially life-threatening drug reaction (**toxic epidermal necrolysis**, **Stevens Johnson syndrome**, hypersensitivity syndrome, and serum sickness) such as mucous membrane erosions, blisters, a positive Nikolsky's sign, high fever, shortness of breath and skin necrosis.

Treatment includes identifying and withdrawing the offending agent as soon as possible. A **biopsy** may be helpful in establishing a diagnosis of a drug reaction. For mild drug eruptions, treatment is supportive with anti-histamines, **topical steroids**, and moisturizing lotions. Severe reactions warrant admission to the hospital for a more thorough work-up. Intravenous immunoglobulin may be given to treat toxic epidermal necrolysis and systemic steroids may be given in the treatment of hypersensitivity reactions. Most patients with mild drug eruptions should expect clearing in approximately 1-2 weeks with no complications. All patients should be educated to avoid the offending agent to prevent further complications.

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