

## RESIDENT ROUNDS: PART II

# High Yield Cutaneous Drug Reactions

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### High Yield Cutaneous Drug Reactions

Reaction	Implicated Medications	Clinical Features
Acral Erythema (Palmoplantar erythrodysesthesia)	Chemotherapy; Cytarabine	<b>Onset (O):</b> days-weeks <b>Duration (D):</b> 2 weeks <b>Symptoms (Sx):</b> Painful erythema/edema, dysesthesia, desquamation, palms/soles, digits <b>Treatment (Tx):</b> chemo cessation/adjustment, analgesia, cold compresses.
<b>AGEP</b> (Acute Generalized Exanthematous Pustulosis)	“Bumps Make Mothers Cry” <u>Beta-lactams</u> , <u>Macrolides</u> , <u>Mercury</u> , <u>CCBs</u>	<b>O:</b> Hours-2 days <b>D:</b> 1-2 weeks >90% drug-induced <b>Sx:</b> Fever, burning, pruritus Non-follicular sterile pustules, face → axilla/groin, superficial desquamation. <b>Histo:</b> Subcorneal spongiform pustules, papillary dermal edema <b>Labs:</b> Leukocytosis (PMNs, +/- Eos) <b>Tx:</b> Cessation, corticosteroids
<b>DRESS</b> (Drug Reaction with Eosinophilia and Systemic Symptoms)  AKA: DIHS (Drug- induced hypersensitivity syndrome)	<b>Carbamazepine</b> , <b>phenobarbital</b> , <b>phenytoin</b> , <b>sulfonamides</b> , allopurinol, dapsone, lamotrigine, minocycline, gold salts, and anti-retrovirals.	<b>O:</b> 7-40 days <b>D:</b> Weeks-months 70-90% drug-induced <b>Sx:</b> Morbilliform rash on face, upper trunk, extremities → edema (facial). Fever, lymphadenopathy, myocarditis, pneumonitis, thyroiditis, GI bleeding. <b>Labs:</b> ↑ <b>Eos</b> , ↑ LFTs (50%), ↑ Cr/BUN <b>Histo:</b> Papillary dermal lymphocytic infiltrate, dermal edema, eosinophils. <b>Tx:</b> Systemic steroids (heart/lung dz), topical steroids (cutaneous only) 5-10% mortality (fulminant hepatitis)
Erythema multiforme	“The A’s” Anti- inflammatories (NSAIDs), Antibiotics (Aminopenicillins, Sulfonamides), Anticonvulsants, Allopurinol	<b>O:</b> 24–72 hours <b>D:</b> 2 weeks <b>Sx:</b> Targetoid papules/plaques, EM major with mucosal involvement. Recurrent EM associated with HLA-B15 +/- HSV <b>Histo:</b> Necrotic keratinocytes, superficial dermal edema, perivascular infiltrate IF: perivascular/DEJ with granular C3/IgM <b>Tx:</b> Address precipitating factor, symptomatic (corticosteroids, antihistamines, antivirals)

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Fixed Drug Eruption	<b>Sulfonamides</b> , tetracyclines, pseudoephedrine (non-pigmented), NSAIDs, barbiturates, carbamazepine, OCPs, ASA, phenolphthalein.	<b>O:</b> 1-2 wks (1 <sup>st</sup> exposure), <24 hrs (subsequent exposures) <b>D:</b> Days/weeks <b>Sx:</b> Solitary/multiple erythematous, edematous plaques, dusky/violaceous hue, +/- central blister, residual hyperpigmentation, genitalia/perianal > other locations Same site recurrence <b>Tx:</b> Self-limited
Lichenoid drug eruption	ACEi, Beta blockers, HCTZ, antimalarials, anti-TNF, Gold, Penicillamine	<b>O:</b> 30-100 days, varies with drugs <b>D:</b> wks/mos post drug cessation <b>Sx:</b> Photodistributed LP-like papules without Wickham's striae, no mucous membranes, residual hyperpigmentation <b>Histo:</b> LP with <b>eos</b> , plasma cells, parakeratosis, deep infiltrate <b>Tx:</b> Drug cessation, corticosteroids
Linear IgA (LABD)	<b>Vancomycin</b> , amiodarone, sulfa, diclofenac, piroxicam, lithium	<b>O:</b> 24 hrs-15 days <b>D:</b> 2-5 weeks Autoantibody to LAD-1/LABD97 <b>Sx:</b> Pruritic, annular/grouped papules/vesicles/bullae, extensors/buttocks +/- mucosal involvement. Associated malignancy (5%). <b>Histo:</b> Subepidermal bullae, PMNs in papillary dermis. <b>DIF:</b> linear IgA, +/- C3 at BMZ. <b>Tx:</b> <u>Dapsone</u> , <u>sulfapyridine</u> , oral steroids
Morbiliiform exanthem	Various; antibiotics (beta-lactams, sulfa), antiepileptics	<b>O:</b> 7-21 days <b>D:</b> 1-2 weeks <b>Most common reaction</b> <b>Sx:</b> pruritic "maculopapular rash," central → peripheral spread. No internal organ involvement <b>Tx:</b> Drug cessation
Neutrophilic eccrine hidradenitis	Chemotherapy ( <b>Cytarabine</b> )	<b>O:</b> <2 weeks <b>D:</b> several weeks <b>Sx:</b> Generalized, painful/pruritic, erythematous papules/pustules +/- Fever, neutropenia. Sign of effective chemotherapy. <b>Tx:</b> self-limited, colchicine, dapsone
Radiation recall	Hydroxyurea, <b>MTX</b> , Doxorubicin	<b>O:</b> minutes-days (IV), days-weeks (PO) <b>D:</b> weeks-months <b>Sx:</b> Confined erythema/vesiculation in previously irradiated area, +/- organ involvement <b>Tx:</b> topical/oral corticosteroids

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TEN/SJS	Carbamazepine, lamotrigine, phenytoin, allopurinol, penicillins, sulfonamides, antiretrovirals, barbiturates, NSAIDs	<p><b>O:</b> 7-21 days (1<sup>st</sup> dose), 2 days (re-exposure)</p> <p><b>D:</b> variable</p> <p><b>Sx:</b> Mucocutaneous sloughing, poorly demarcated, dusky, erythematous or purpuric macules/papules/plaques → flaccid bullae → painful mucosal erosions (&gt;90%). Trunk → face/extremities. +/- residual ocular symptoms.</p> <p>TEN &gt;30% BSA; SJS/TEN 10-30%; SJS &lt;10%</p> <p><b>SCORTEN scale:</b> age &gt; 40, HR &gt;120 bpm, BSA &gt;10% (day 1), serum urea &gt;27 mg/dl, serum HCO<sub>3</sub> &gt;20 mmol/L, glucose &gt;250 mg/dL, underlying cancer/hematologic malignancy.</p> <p><b>Histo:</b> full-thickness epidermal necrosis.</p> <p><b>Tx:</b> Cessation, ICU support, IVIg</p> <p><b>Prognosis:</b> 25-50% mortality</p>
Urticaria	Radiocontrast media, NSAIDs, polymyxin B, ASA, opiates, beta-lactams, sulfa, TCN	<p><b>O:</b> Hours-6 days</p> <p><b>D:</b> &lt;24 hrs (individual lesions)</p> <p><b>Sx:</b> Transient erythematous/edematous papules/plaques.</p> <p>Acute &lt; 6 weeks &gt; Chronic</p> <p><b>Tx:</b> Antihistamines, cessation</p>

## Acronyms/Abbreviations

ACEi: Acetylcholinesterase inhibitor  
 ASA: Acetylsalicylic acid  
 BSA: Body surface area  
 BMZ: Basement membrane zone  
 BUN: Blood Urea Nitrogen  
 CCB: Calcium channel blocker  
 Cr: Creatinine  
 D: Duration  
 Dz: Disease  
 DEJ: Dermoepidermal junction  
 EM: Erythema multiforme  
 Eos: Eosinophils  
 HCO<sub>3</sub>: Bicarbonate  
 HCTZ: Hydrochlorothiazide  
 HLA: Human leukocyte antigen  
 HR: Heart rate  
 HSV: Herpes simplex virus  
 ICU: Intensive care unit  
 IF: Immunofluorescence (DIF: Direct immunofluorescence)  
 IV: Intravenous  
 IVIg: Intravenous immunoglobulin  
 LFTs: Liver function tests  
 LP: Lichen planus  
 MTX: Methotrexate  
 NSAIDs: Nonsteroidal anti-inflammatory drugs  
 O: Onset  
 OCPs: Oral contraceptive pills  
 PMNs: Polymorphonuclear leukocytes  
 SCORTEN: Score of TEN  
 SJS: Stevens Johnson Syndrome  
 Sx: Symptoms  
 TCN: Tetracycline  
 TEN: Toxic epidermal necrolysis  
 Tx: Treatment  
 TNF: Tumor necrosis factor

## DISCLOSURES

The authors have no relevant conflicts of interest to disclose.

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