

From SJS to TEN: What a Pharmacist Needs to Know – USHP Fall 2023 Resident CE Series

What is SJS and TEN?

- Severe cutaneous adverse reactions characterized by skin necrosis and detachment of the epidermis

Pathophysiology¹⁻³

- Predominately a drug-specific T-cell mediated reaction
- Human leukocyte antigen (HLA) receptors interact with the drug and activate CD8+ T-cells which leads to release of cytotoxic proteins and inflammatory cytokines
- Activated CD8+ T-cells primarily target keratinocytes with TNF- α and other cell signals leading to their apoptosis and necroptosis

Risk Factors⁴

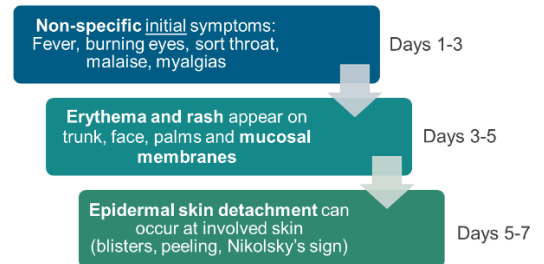
Exposure to certain medications
Increasing number of chronic conditions
Female sex
Younger adults
African American or Asian decent
HIV infection
Hematologic malignancy
Certain HLA haplotypes

Known Drug-Causes^{2, 5, 6}

Classic and Other Associations	
Anti-convulsants	Antibiotics
Lamotrigine	Bactrim
Carbamazepine	Aminopenicillins/Beta-lactams
Phenytoin	Tetracyclines
Valproic Acid	Cephalosporins
Phenobarbital	Fluoroquinolones
Allopurinol	Immune Checkpoint Inhibitors
Antiretrovirals	Nivolumab
Nevirapine	Pembrolizumab
Abacavir	NSAIDs

BOLD = most common

Clinical Presentation^{1,7}



Acute Management^{1, 2, 4}

- A thorough drug history is important to identify a possible cause
- Multimodal supportive care with systemic drug therapy are the cornerstones of management
- Supportive care includes wound care, fluid resuscitation, stress ulcer prophylaxis, deep venous thromboembolism prophylaxis, ocular care, oral and gastrointestinal care, urogenital care, nutritional care, and infection prophylaxis

Systemic Drug Therapy^{1, 2, 4}

- Current evidence predominantly supports either cyclosporine or etanercept to halt the progression of skin involvement and hasten healing time

Cyclosporine

Mechanism of Action	Calcineurin inhibitor which inhibits T-cell proliferation and blunts the cytokine-mediated inflammatory reaction
Dosing	PO: 1.5-2.5 mg/kg every 12 hours (based on ABW) IV (1/3 the oral dose): 0.5-0.87 mg/kg every 12 hours
Administration	Infuse over 2-6 hours. Use low adsorption tubing (non-PVC) of infusions. Separate doses by 12 hours. Use Gengraf® product for oral dosing
Safety Monitoring	Renal function, hepatic enzymes, hypersensitivity reactions (IV formulation)
Therapeutic Drug Monitoring	No established therapeutic range. Drug levels used for safety monitoring
Duration	Usually continued until skin progression stops and blister development arrests

Etanercept

Mechanism of Action	Recombinant TNF receptor that binds TNF- α
Dosing	Adults and Pediatrics: 25 subcutaneously twice a week if ≤ 65 kg or 50 mg subcutaneously twice a week if >65 kg
Administration	Standard injection technique for subcutaneous injections
Safety Monitoring	TB reactivation, infusion-related reactions
Therapeutic Drug Monitoring	Etanercept concentrations associated with efficacy not established
Duration	Usually continued until skin progression stops and blister development arrests

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