



# Case Study Review

*Heather McManus, APRN, FNP-BC*

*April 29, 2026*

TB Nurse Case Management • April 29 – May 1, 2026 • Fort Worth, Texas

# Heather McManus, APRN, FNP-BC

Has the following disclosures to make:

- No conflict of interests
- No relevant financial relationships with any commercial companies pertaining to this activity



# Case Study: DRESS Syndrome

*Heather McManus, APRN, FNP-BC*



# Objectives

- Discuss the pathophysiology of DRESS Syndrome.
- Be able to identify signs/symptoms of DRESS Syndrome.
- Review criterion for diagnosis.
- Case Presentation.

# Case Presentation

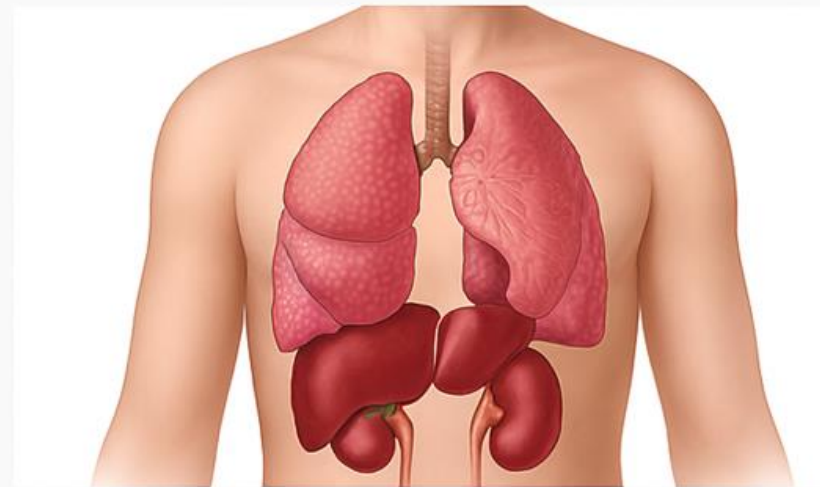
- 82 y/o male from Vietnam with multiple comorbidities was admitted to a local hospital in May 2023 with CP and SOB.
- Imaging showed bilateral mass like infiltrates, as well as consolidation in LUL.
- Sputum was positive for AFB and he was started on RIPE.
- He presented to TCPH on May 30, 2023.

# What is DRESS Syndrome?

- Severe drug-induced hypersensitivity reaction
- Rash, fever, eosinophilia, lymphadenopathy
- Latency 2–8 weeks after drug initiation
- ~10% mortality with organ involvement

# Clinical Presentation & Diagnosis

- Severe delayed hypersensitivity reaction with multisystem involvement
- Latency: Typically 2-8 weeks (up to 12) after drug initiation
- High morbidity (organ damage) and mortality ~8-10%



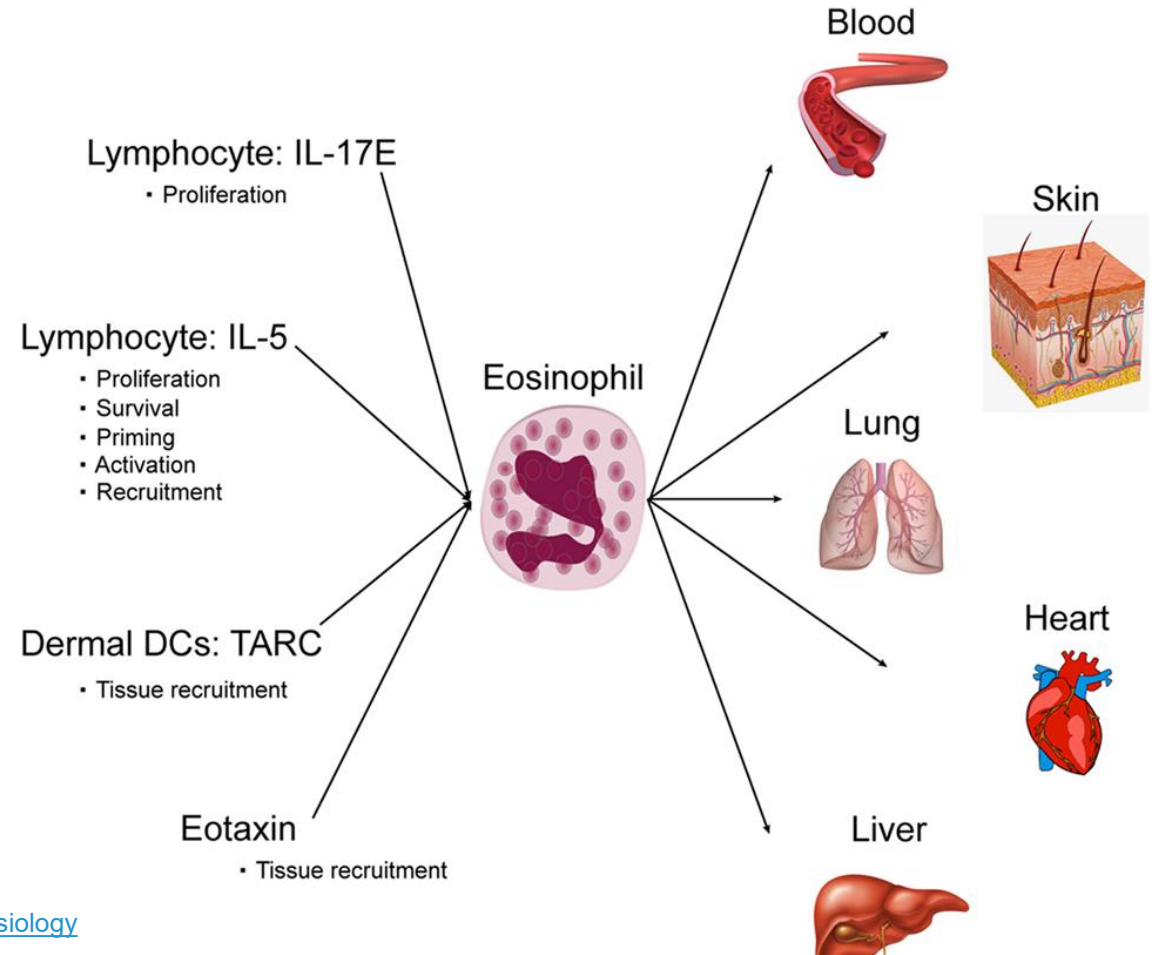
# Pathophysiology

Immune-mediated Type IV hypersensitivity

CD8+ T-cell activation;  
Th1/Th2 involvement

HHV-6 reactivation may worsen severity

Genetic predisposition via HLA variants



[Frontiers | New Insights into Drug Reaction with Eosinophilia and Systemic Symptoms Pathophysiology](#)

[Hypersensitivity Reactions: Types, Symptoms & Treatment \(Mayo Clinic\)](#)

[https://wwwnc.cdc.gov/eid/article/5/3/99-0306\\_article](https://wwwnc.cdc.gov/eid/article/5/3/99-0306_article)

[HLA Associations and Clinical Implications in T-Cell Mediated Drug Hypersensitivity Reactions: An Updated Review – PMC](#)

# Epidemiology & TB Medication Triggers



Incidence: 1 in 1,000–10,000 drug exposures



Anti-TB drugs responsible for 7.5% of antimicrobial-related DRESS



RIPE regimen implicated: INH, RIF, PZA, EMB

## Clinical Features



Skin: morbilliform rash, facial edema

Systemic: fever, lymphadenopathy

Hematologic: eosinophilia, atypical lymphocytes

Organ injury: liver, kidneys, lungs, heart

# Diagnosis (RegiSCAR Criteria)

Fever, diffuse rash, eosinophilia

Atypical lymphocytes, multiorgan involvement

Latency 2–8 weeks

Lymphadenopathy

# Management Approach

## Key Management Principles

**Immediate Drug Cessation:** Identify and stop the causative agent instantly.

**Supportive Care:** Hospitalization is required, often with intensive care or burn unit monitoring for organ failure.

### Immunosuppression:

- **Mild DRESS:** Topical high-potency steroids.
- **Moderate/Severe DRESS:** Systemic corticosteroids (prednisolone/methylprednisolone 0.5–1.0 mg/kg/day).
- **Refractory Cases:** Immunomodulators such as cyclosporine or intravenous immunoglobulin (IVIG) may be considered.

**Long-term Management:** Taper steroids slowly over 6–12 weeks to avoid flares.

**Monitoring:** Monitor for viral reactivation (e.g., HHV-6, CMV) and organ dysfunction (liver, kidney, heart).

- [https://www.worldallergyorganizationjournal.org/article/S1939-4551\(24\)00066-8/fulltext#:~:text=Withdrawal%20of%20the%20offending%20medication,tapering%20over%20%E2%80%93%20months](https://www.worldallergyorganizationjournal.org/article/S1939-4551(24)00066-8/fulltext#:~:text=Withdrawal%20of%20the%20offending%20medication,tapering%20over%20%E2%80%93%20months)

# Prognosis and Follow-Up

- While most patients recover, mortality is 5-10%, usually due to organ failure.
- Patients should be monitored for the development of long-term autoimmune diseases

# Case Presentation

Back to our 82 year old gentleman...

- He returned to TCPH September 21, 2023 after nearly 12 weeks of inpatient care (6 weeks in hospital/6 weeks in SNU).
- Heartland consulted during hospitalization.
- Patient now on BPaL.
- RIF, EMB, PZA, and Moxi were listed as allergies on his chart, due to h/o DRESS syndrome.

# Case Presentation

- He continued on monthly visits.
- November: QTc prolongation & change in refraction on Snellen.
- Cardiology & Ophthalmology consulted. BDQ and LZ continued.

# Case Presentation

December visit: amylase was markedly elevated (pt in care with hematologist), possibly due to Linezolid; TB meds held and amylase repeated.

- Meds held for 2 weeks. Heartland consulted.

# Case Presentation

- He RTC in early Jan 2024 to restart BPaL regimen.
- Saw MD 2 weeks later. Stable CXR. Slight decrease in Snellen left eye. Con't with current treatment.
- Feb 2024: Vision back to baseline. No change in QTc. CXR stable.
- He completed DOT on 2/21/2025 with 130 DOT doses.
- Plan for sputum. F/U 3 months with CXR and repeat sputum.

# Case Presentation

May 2024:

- Doing well. No fever or chills. Minimal cough. Appetite fair. Weight stable.
- CXR unchanged. Sputum collected.
- Heartland updated.

# Clinical Pearls

- Suspect DRESS 2–12 weeks after TB drug initiation
- Hold TB medications early.
- Use second-line agents when necessary.
- Coordinate with allergy & infectious disease specialists.
- Corticosteroids to manage inflammation and prevent relapse.

# Clinical Pearls

- Heartland has a Rash Description and Assessment Guide on their website.



## Consultations

Heartland National TB Center's Toll-Free Warm-Line  
(800) TEX-LUNG or (800) 839-5864

<https://www.heartlandntbc.org/>

## 2c. Types of Reactions

**Exanthemata (external rash)** – Diffuse macule and papule, evolve over days after drug initiation

**Urticaria & angioedema** – Onset within minutes to hours after drug administration; potential for anaphylaxis

**Fixed drug eruption** – Hyper-pigmented plaques; upon drug re-exposure, plaques reoccur at same site.

• **DRESS** – Cutaneous eruption, fever, eosinophilia, lymphadenopathy

• **Anaphylaxis** – Urticaria, angioedema, bronchospasm, gastrointestinal

• **Stevens-Johnson Syndrome** – Lesions, ulcers on mucous membranes, mouth, lips, truncal area; fever, fatigue, sore throat, ocular involvement

• *Seek immediate medical attention*

## 1. Evaluate the Rash

- Identify the type of lesion (size, layers of skin involved, and characteristics)
- Identify location and distribution of lesions
- Identify the configuration
  - The shape of one lesion:
    - Linear** – straight line
    - Target** – Bullseye or iris appearance; rings with central duskiness; purplish center, surrounded by pale pink, outer ring darker pink
  - The arrangement of clusters of lesions:
    - Confluent** – Flowing into or coming together
    - Random**
    - Patterned**
- Evaluate the texture
- Color
- Warm to the touch
- Inspect oral mucosa

*See back-side for terms and examples*

# References

1. [Frontiers | New Insights into Drug Reaction with Eosinophilia and Systemic Symptoms Pathophysiology](#)
2. [Drug Reaction with Eosinophilia and Systemic Symptoms \(NEJM\)](#)
3. [Drug Reaction with Eosinophilia and Systemic Symptoms \(DReSS\)/Drug-Induced Hypersensitivity Syndrome \(DiHS\)—Readdressing the DReSS - PMC](#)
4. [Frontiers | New Insights into Drug Reaction with Eosinophilia and Systemic Symptoms Pathophysiology](#)
5. [Hypersensitivity Reactions: Types, Symptoms & Treatment \(Mayo Clinic\)](#)
6. [https://wwwnc.cdc.gov/eid/article/5/3/99-0306\\_article](https://wwwnc.cdc.gov/eid/article/5/3/99-0306_article)
7. [HLA Associations and Clinical Implications in T-Cell Mediated Drug Hypersensitivity Reactions: An Updated Review – PMC](#)
8. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11141990/>
9. <https://www.webmd.com/skin-problems-and-treatments/morbilliform-rash>
10. [Microsoft Word - Rash Assessment and Description Guide \(FINAL\\_11.14.2022\)](#)
11. [https://www.worldallergyorganizationjournal.org/article/S1939-4551\(24\)00066-8/fulltext#:~:text=Withdrawal%20of%20the%20offending%20medication,tapering%20over%202%E2%80%933%20months.](https://www.worldallergyorganizationjournal.org/article/S1939-4551(24)00066-8/fulltext#:~:text=Withdrawal%20of%20the%20offending%20medication,tapering%20over%202%E2%80%933%20months.)



**Main Address:**

1101 S. Main Street  
Fort Worth, Texas 76104



**Phone:**

817-248-6299



**Scan the QR code or visit:**

[www.tarrantcountytexas.gov/health](http://www.tarrantcountytexas.gov/health)

