“Intention to Treat”: Judicious antibiotic use in asymptomatic bacteriuria

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Learning Objectives

Learning objectives:

1. Learn indications for treatment of asymptomatic bacteriuria
2. Identify a less common presentation of toxic epidermal necrosis (TEN)
3. Recognize 3 common antibiotic side effects and the importance of judicious antibiotic use

Case Information

Patient HPI: A 36-year-old woman hospitalized for alcoholic hepatitis was started on ceftriaxone and levofloxacin for bacteriuria at an outside hospital. She denied urinary symptoms. One week later, she developed a diffuse painful, pruritic, erythematous, papular rash with mucosal ulcerations in oropharynx and labial folds

Pertinent history:

- Medical: alcoholic hepatitis diagnosed 3 weeks ago, depression
- Social: drinks 1 pint of vodka daily, stopped 3 weeks ago
- Medications: fluoxetine (taking for 4 years, no recent dose changes)
- Allergies: no known allergies

Pertinent physical exam findings:

- Vitals: HR 110, T 38.1C, BP 95/60, 92% on 1L NC
- HEENT: shallow mucosal ulcerations on inside of lower lip
- CV: tachycardic, regular rhythm, no murmurs, rubs
- Resp: coarse breath sounds in bilateral lower lung fields, no wheezing
- Skin: diffuse skin ulcerations with crusted lesions (Figure 1), with skin sloughing on bilateral feet

Initial work up:

- CBC: WBC 14, Hgb 9, Plts 80
- BMP: Na 134, Cl 99, CO2 24, BUN/Cr 15/1.1
- Lactate: 3
- LFTs: AST 95, ALT 80, total bilirubin 3.2, alkaline phosphatase 301 (similar to presenting LFTs at OSH)

The patient was started on acyclovir and vancomycin for presumed HSV with associated bacterial skin and soft tissue infection (SSTI).

Clinical Course

- The patient’s rash did not significantly improve with IV antivirals or antibiotics
- Dermatology was consulted for skin biopsy and assistance in diagnosis

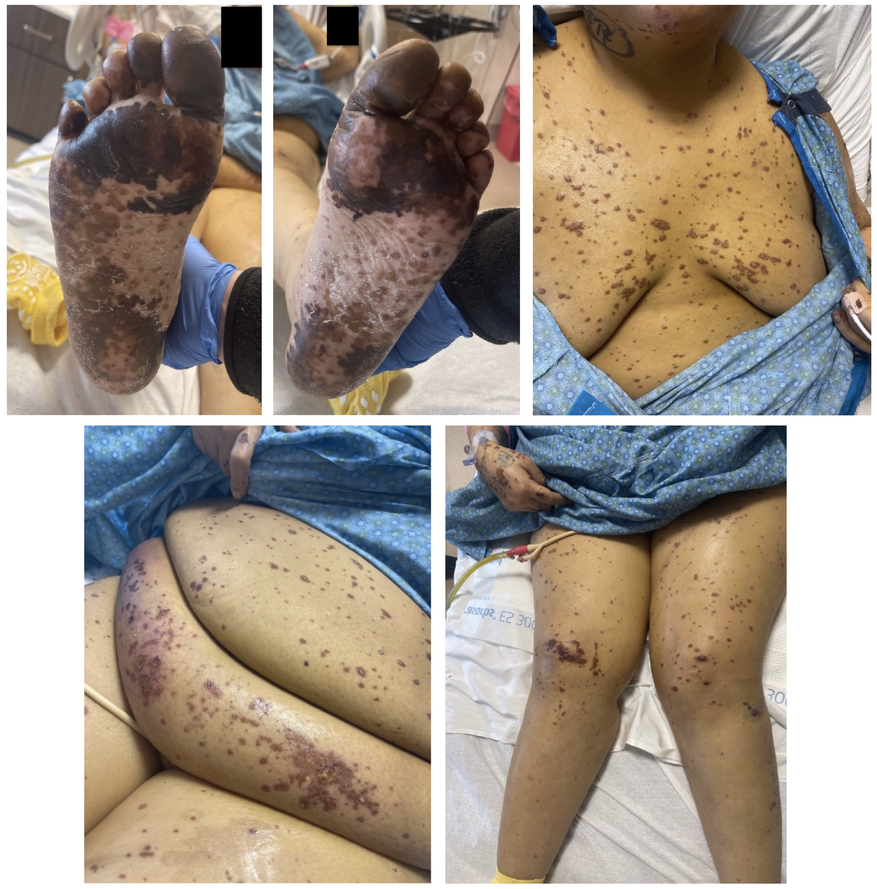

Figure 1: Diffuse, pruritic papular rash on bilateral feet, chest wall, abdomen, and bilateral lower extremities
Images presented with patient’s permission, and identifying characteristics have been covered for patient privacy

Diagnosis

- Skin biopsy showed epidermal necrosis with features suggestive of epithelialization suggestive of **toxic epidermal necrosis** (**TEN**), likely from levofloxacin or ceftriaxone
- Antibiotics and antivirals were stopped and she was started on prednisone
- Unfortunately, her TEN resulted in uncontrolled skin pain, scarring, neuropathy, and anasarca from steroids and IV fluids, requiring prolonged hospitalization

Discussion

- Prevalence of asymptomatic bacteriuria varies with age, gender, and comorbidities but ranges from 2% to 15% in the general population[1]
- Treatment of asymptomatic bacteriuria is only indicated in certain cases, such as pregnancy, prior to urologic procedures, and in patients with renal transplants
- Approximately 20% of patients experience adverse effects from antimicrobial use[2]
- Given the wide-range of cutaneous manifestations for drug eruption, diagnosis and treatment can be delayed if other diseases are suspected[3]
- This patient presented with a pustular rash instead of the typical bullous lesions seen with TEN and was started on additional antimicrobials prior to initiating steroids as supportive treatment for TEN

Conclusions

- Antibiotic overuse or misuse can lead to detrimental side effects
- Clinical decision tools and a local antibiogram can help decrease antibiotic misuse and prevent adverse effects
- We have all been tempted to treat an abnormal urinalysis
- This unfortunate case is a reminder to be intentional about and judicious with antibiotic prescribing for all patients, and in particular, for those with asymptomatic bacteriuria

References

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2. Tamma, Pranita D et al. “Association of Adverse Events With Antibiotic Use in Hospitalized Patients.” JAMA internal medicine vol. 177,9 (2017): 1308-1315. doi:10.1001/jamainternmed.2017.1938
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