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Closing the Brief Case: A Fatal Case of Necrotizing Fasciitis Due to Multidrug-Resistant *Acinetobacter baumannii*

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ANSWERS TO SELF-ASSESSMENT QUESTIONS

1. What is the most common etiology of monomicrobial (type 2) necrotizing fasciitis?
    a. *Acinetobacter baumannii*
    b. *Staphylococcus aureus*
    c. *Streptococcus pyogenes*
    d. *Vibrio vulnificus*

    Answer: c. Although all of the organisms listed cause type 2 necrotizing fasciitis, the most common cause is still *S. pyogenes*, with an incidence of 0.4 per 100,000 in the United States. Due to variations in reporting practices, the exact incidences of other etiologies are not known, but they are less common than *S. pyogenes*.

2. What is the most important intervention in controlling the spread of acute necrotizing fasciitis?
    a. Broad-spectrum antibiotics
    b. Surgical debridement
    c. Hyperbaric oxygen
    d. Intravenous immunoglobulin

    Answer: b. Although early and aggressive antibiotic therapy is of great importance, it can be difficult to differentiate necrotizing fasciitis from cellulitis. To accurately identify and control the spread of a necrotizing infection, surgical exploration with possible debridement and/or amputation is critical.

3. Which of the following contribute(s) to mortality with *A. baumannii*-associated necrotizing fasciitis?
    a. Concomitant bacteremia
    b. Antimicrobial resistance
    c. Comorbidities such as diabetes
    d. All of the above

    Answer: d. Four factors have been described associated with *A. baumannii*, the three in the list above as well as the requirement for surgical debridement. Combined, these factors contribute to the difficulty in treating *A. baumannii*-associated necrotizing fasciitis and, therefore, its high mortality rate.

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TAKE-HOME POINTS

- Necrotizing soft tissue infections (NSTIs) can rapidly progress to cause severe disease, including sepsis, multisystem organ failure, and death.
- *Acinetobacter baumannii* has emerged as an etiology in polymicrobial and monomicrobial necrotizing fasciitis.
- Multidrug resistance, bacteremia, and host comorbidities lead to a high mortality rate for *A. baumannii*-associated NSTIs, which often require surgical debridement.
- Additional genomic studies are needed to determine the unique pathogenic features of *A. baumannii* strains that cause fatal NSTIs.