

Case Report (series)

Poster Title: Assessment of Cutibacterium Bacteremia: A Case Series

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Case Series: *Cutibacterium* species, formerly classified under the genus *Propionibacterium*, are anaerobic gram-positive bacilli commonly found on human skin. Historically, they are considered as low-virulence organisms, however, they can cause severe bloodstream infections, especially in patients with implanted medical devices, prosthetic joints, or immunosuppression. The clinical relevance of *Cutibacterium* bacteremia remains underexplored, often leading to diagnostic uncertainty and challenges in distinguishing true infection from contamination. This project aims to evaluate cases of *Cutibacterium* bacteremia, distinguish true infections from contamination, and potentially provide insights into the diagnostic significance and therapeutic management based on our internal experience. A report generated by TheraDoc software identified 17 patients with positive blood cultures for *Cutibacterium* between January 2024 to December 2024. All positive blood cultures for *Cutibacterium* were included in this analysis. Data collection included patient demographics, cultures and sensitivities, infection source and diagnosis, and antimicrobial use. Patients were classified as having a true infection or a contamination based on clinical and microbiological criteria, as well as the presence of confirmatory repeat cultures. Institutional review board approval at AtlantiCare Regional Medical Center was obtained. A total of 28 positive *Cutibacterium* blood culture episodes were identified in 17 patients with 9 (52.9%) classified as true infections. Seven patients with true infections were treated with broad spectrum antibiotics targeting *C. acnes*. Four patients (23.5%) had repeated positive blood cultures – often recommended to distinguish true infection from contamination. The most common species was *Cutibacterium acnes*, found in 15 patients (88.2%) highlighting it is the predominant species in our cases of *Cutibacterium* bacteremia. Males accounted for 13 cases (76.5%). Clinical presentations included cellulitis (n=4 patients), pneumonia (n=4 patients), complicated urinary tract infections (n=3 patients), and sepsis (n=2 patients), with others having diverticulitis and wound infection. Additionally, two patients underwent major surgery before blood cultures, and both had true infections. Our findings indicate that *Cutibacterium* bacteremia represents a true infection in approximately half the cases it is cultured, challenging the assumption that positive cultures are likely contaminants. Clinicians should carefully assess factors such as clinical signs of infection, culture source, co-isolated pathogens, and the presence of implanted devices when distinguishing true infection from contamination. A standardized approach to diagnosis is crucial for ensuring appropriate management and optimizing patient outcomes. Empiric antibiotic therapy selection for *C. acnes* should be

case dependent, considering potential resistance to macrolides, clindamycin, metronidazole, and tetracyclines. Penicillins (e.g., ampicillin), cephalosporins (e.g., ceftriaxone), linezolid, and vancomycin may be effective treatment options.