

TITLE: MULTIDRUG-RESISTANT *Corynebacterium amycolatum* STRAINS IDENTIFIED AS PATHOGENS OF COMMUNITY-ACQUIRED URINARY TRACT INFECTIONS

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ABSTRACT:

Non-diphtheria toxin (DT)-producing *Corynebacterium* spp. have been increasingly reported as etiologic agents of mild to severe nosocomial infections expressing heterogenic multidrug-resistant (MDR) profiles. However, studies concerning community-acquired and nosocomial infections due to *Corynebacterium amycolatum* pathogenic strains remain necessary, especially in tropical and/or developing countries, including South America. The present study aimed to isolate and identify *C. amycolatum* strains recovered from patients presenting community-acquired urinary tract infections (UTI). Microorganisms were characterized by conventional phenotypic tests and identified by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS). Antimicrobial susceptibility profiles were determined by the disk diffusion method and MDR profiles were defined when non-susceptibility to three or more classes of antimicrobial agents were verified. Additionally, due to occurrence of a high resistance to beta-lactams agents, imipenem-resistant clinical isolates (n=6) were submitted to the phenotypic disk approximation test for detection of metallo-beta-lactamase (MBL) production. A total of 38 clinical isolates were identified as *C. amycolatum* isolated from patients with UTI, attended at a Brazilian ambulatorial unit in an urban area located in the mountainous region of Rio de Janeiro State, Brazil: 63.16% adults (18 to ≤ 59 years old), 28.95% elderly (≥60 years old); 7.89% infants (<18 years old); only one male. Most *C. amycolatum* uropathogens (n=28; 73.68%) were verified to express heterogenic MDR profiles. Imipenem-resistant strains showed MBL-positive (n=4) and MBL-negative (n=2) results. In conclusion, this study highly emphasizes MDR *C. amycolatum* as human uropathogen. Data demonstrated the relevance of continuous investigation of *C. amycolatum* in community infections, as well as periodic assessment of susceptibility to antimicrobial agents. Additional studies are being carried out to define clonal profiles and virulence mechanisms, in addition to the dissemination of pathogenic strains of MDR *C. amycolatum* strains in hospital and community units in Brazil.

Keywords: *Corynebacterium amycolatum*, metallo-beta-lactamase, multidrug resistance, urinary tract infection