TITLE: ISOLATION OF *Corynebacterium* spp. FROM CLINICAL SPECIMENS ANALYSED IN ROUTINE LABORATORIES OF THE METROPOLITAN AREA OF RIO DE JANEIRO DURING 2017 AND 2019

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ABSTRACT:
In the last years, *Corynebacterium* spp. and other irregular Gram-positive rods (IGPR) have been increasingly related to nosocomial and community infections worldwide, mostly in patients receiving immunosuppressive therapy, or who have used invasive medical devices. Some of these emerging species are natural colonizers of the skin and mucous membranes, such as *Corynebacterium striatum* and *Corynebacterium amycolatum.* The virulence potential of these *Corynebacterium* spp. has not yet been well demonstrated; however, infections were found severe and even fatal in many opportunities, particularly in cases that the antimicrobial therapy has not been prompt started or the bacterial isolated presented a multidrug resistance (MDR) profile. Although conventional biochemical tests often misidentified *Corynebacterium* spp., MALDI-TOF mass spectrometry represents a rapid and reliable tool for the identification of these species in routine laboratories. The present work aimed to evaluate microbiological, clinical, and epidemiological aspects of *Corynebacterium* spp. isolated from clinical specimens analysed in routine laboratories of the metropolitan area of Rio de Janeiro, from 2017 to 2019. Bacterial strains were identified by MALDI-TOF (VITEK® MS), and the antimicrobial susceptibility profile was determined by the disk diffusion method. A total of 51 IGPR strains were obtained, mostly from hospitalized patients (64.70%), female (58.33%) and aged > 60 years. IGPR strains were mainly recovered from blood (49.01%), followed by urine (13.72%). The predominant species were *C. striatum* (25.49%) and *C. amycolatum* (19.60%). Although all clinical isolates were susceptible to linezolid and vancomycin, resistance to penicillin (49%), ciprofloxacin (35.29%) and gentamicin (23.53%) was observed. *C. striatum* (n=1), *C. urealyticum* (n=1) e *C. imitans* (n=1) strains showed a MDR profile. Data showed the presence of *Corynebacterium* spp. in clinical specimens of patients attended in various hospital units of the metropolitan area of Rio de Janeiro. Once *Corynebacterium* spp., particularly *C.* striatum, can present multidrug resistance and intra-hospital dissemination, isolation of IGPR from clinical material, particularly from patients at risk for severe corynebacterial infections and/or hospitalized, should be considered. Moreover, the resistance profile should be promptly investigated in order to early establish antimicrobial therapy and control bacterial dissemination.

KEYWORDS: *Corynebacterium* spp., emerging pathogens, laboratorial diagnosis, MALDI-TOF MS.