TITLE: OXA-23-producing high-risk clones of *A. baumannii* as cause of serious infections and mortality in patients with COVID-19 admitted to intensive care units in a Brazilian hospital.

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The COVID-19 pandemic has led to an increase in the rates of multidrug-resistant (MDR) infections in intensive care units (ICUs). In this regard, infections by MDR *A. baumannii* have been globally reported, and related to poor prognosis. We present phenotypic and molecular characteristics of 91 *A. baumannii* isolated between May and October 2020, from 86 patients with COVID-19 admitted to ICUs in a tertiary-care hospital in Brazil. Clonal relatedness was determined by MLST, and *Apa*I-PFGE was used to discriminate genetic profiles within ST groups. Patient´s information were obtained. The majority of isolates were recovered from tracheal aspirate (85.7%), followed by urine (8.8%), blood (4.4%) and pleural fluid (1.1%). All isolates presented resistance to ceftazidime, cefepime, imipenem and meropenem, while 98.9% were resistant to gentamicin and 94.5% to amikacin. Regarding tigecycline 6.6% of isolates presented resistance, and 69.2%, intermediate resistance. No resistance to polymyxins was detected. The $bla_{\text{OXA-51-like}}$ gene, and $bla_{\text{OXA-23-like}}$ associated to IS*Aba1* were detected in all isolates. Four ST were identified: ST1 (51 isolates - 56.0%), ST15 (34 isolates - 37.4%), ST730 (5 isolates 5.5%), and ST79 (1 isolate 1.1%). PFGE showed that ST15 isolates were distributed among 4 clusters, ST1 among 7 clusters and ST730 belonged to one cluster. Identical isolates were also observed. Most patients were male (63.9%), over 60 years-old (63.9%), submitted to mechanical ventilation (98.8%). *A. baumannii* was the only isolate in samples from 35 patients (40.7%). Among these 35 patients, 29 (82.9%) received correct treatment (colistin or polymixin B), that was successful in 15 (42.9%). Among the 86 patients, 55 (63.9%) died, from which 5 (9.1%) died of pneumosepsis by *A. baumannii*. In conclusion, ST1 and ST15 were the main *A. baumannii* clones causing infections (mostly ventilator-associated pneumonia) in this cohort of patients with COVID-19. Despite its importance as OXA-23-producing high-risk clone in Brazilian hospitals along with ST1 and ST15, the ST79 was not a major agent in the present study. Emergence of ST730, a single-locus variant of ST79 still rarely detected, highlights the need for continuous surveillance. Horizontal transmission and mortality of COVID-19 patients with hospital acquired *A. baumannii* reinforces the need to ensure strict implementation of measures for infection control.

Keywords: *Acinetobacter baumannii*, secondary-infection, COVID-19, antimicrobial susceptibility, clonal relatedness

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