## Molecular characterization of A. baumanni isolates causing co-infections in SARS-COV-2 patients

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**Background:**
Respiratory viral infections, such as COVID-19, predispose patients to co-infections leading to increased morbidity and mortality. A. baumannii poses as a serious threat to hospital facilities because of its ability to persist in the environment and acquire multi-drug resistance. The aim of this study was to quantify the extent of A. baumannii cross-infection and identify any gene clonality between isolates in SARS-CoV-2 patients.
**Methods:**
Bacterial isolates of A. baumannii found in patients with SARS-CoV-2 admitted to the main Intensive Care Unit (ICU) of the Umberto I Teaching Hospital of Rome were collected between March 2020 and February 2021. Isolates were typed by pulsed-field electrophoresis to analyse their homology relationships.
**Results:**
Overall, 196 SARS-CoV-2 patients were admitted to the ICU. They were mainly male (N = 138) and aged 63 years on average. Of these, 122 died, and 74 were discharged. A total of 157 strains of A. baumannii were isolated from 74 patients (38%), who had a higher mean hospital stay than patients in whom the bacterial strain had not been isolated (24.6 vs. 12.2 days). The genotypic analysis of 120 isolates revealed two main patterns (A and F) and a few subtypes, especially A8 (43%), A4 (29%), and A11 (10%). Clone A8 was found mainly between October 2020 and February 2021, clone A4 in April-December 2020 and January-February 2021, and A11 in December 2020 and January 2021. The strains were susceptible to colistin only, were isolated mostly from tracheobronchial aspirates (41%) or rectal swabs (35%) and accounted for 56 healthcare-associated infections (33% of which sustained by A4, 38% by A8, and 9% by A11).
**Conclusions:**
The isolation of A. baumannii from patients with COVID-19 highlighted the importance of monitoring co-infections caused by this pathogen, which frequently shows a multi-drug resistant profile that may lengthen the hospital stay. It is essential to implement preventive measures to contain these infections.
**Key messages:**
- A. baumanni is a pathogen that needs to be monitored because it may lengthen the hospital stay of SARS-CoV-2 patients.

- In critically ill patients, the continued growth of multidrug-resistant organisms shows the importance of preventing these infections.