

COVID-19: new scenario old problems

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Abstract. The short paper present the problem of hospital acquired infection in subintensive units of a research and teaching hospital. (www.actabiomedica.it)

Key words: COVID 19 epidemic hospital acquired infection

The Corona Virus 19 (COVID-19) epidemic is an infectious disease which was declared as a pandemic and hit all the Countries, all over the world, from the beginning of the year 2020 (1).

In Italy the epidemic started in Lombardia Region and then it circulated all over the Country and at the moment (30.06.2020) there are 239.709 confirmed cases, 33.542 deaths with 14% as case fatality rate (2,3).

As it was recorded from the beginning of this epidemic up to now almost 10% of patients with COVID-19 experiments an hospital admission and 9% of them needs to stay in intensive care units but the numbers were very different at the beginning of the epidemic when the patients with critical conditions were much more (2).

In a research and teaching hospital located in the centre of Milan to face the sudden flow of critical ill COVID 19 patients many beds were turned in intensive and sub intensive care ones, in particular 84 subintensive beds out of the active 716 beds were set up to admit patients who needed less intensive care than in the intensive care units. In total from March 9th to June 6th 2020, 246 patients were admitted to these 84 beds for sub intensive care and 80 of whom perished (data from the hospital administrative records).

During their stay in hospital these patients, as all the others, faced also a considerable threat for

their safety caused by healthcare associated infections (HAIs) which might have determined adverse clinical outcomes (4-8).

All these 246 patients were routinely followed with the usual local infection control surveillance program to detect colonization by multidrug-resistant bacteria, namely MRSA (Methicillin-resistant *Staphylococcus aureus*), multidrug-resistant Gram-negative bacteria and VRE (Vancomycin-resistant enterococci) in addition received all the microbiological investigation in case of infectious symptoms.

Globally, 751 swabs for surveillance program were performed and 90 were found positive in 73 patients. Among these, 14 patients had more than one positive swab in different body sites (namely nose and rectum) with different bacteria species. In particular 35 swabs were positive for VRE and 16 for an extended spectrum beta-lactamase (ESBL) *Escherichia coli*.

Of the 938 cultures performed for clinical purposes in symptomatic patients, 186 resulted positive belonging to 74 patients. Thirty eight patients were diagnosed with an infective episode during hospitalization, 13 with 2 and 12 with 3. The most common isolated pathogens were *Enterococcus faecalis*, *Staphylococcus epidermidis* (29 cases each) and *Escherichia coli* (22 cases).

These first results showed how management of COVID-19 can often be complicated with the emer-

gence of colonization with drug-resistant bacteria and with nosocomial infections, which can lead to aggressive antimicrobial therapies with further resistance selection (9,10).

In our hospital the medical team for HAIs prevention decided against implementing an antibiotic empirical approach for COVID patients, however it must be considered that most of these patients were hospitalized in intensive care units where the odd to receive an antimicrobial therapy is high.

Currently, an universal, safe, effective and targeted treatment for COVID-19 is lacking. More over COVID-19 patients are at high risk of HAIs so their care must be transversal and multidisciplinary and the use and selection of antibiotics should be weighed to prevent resistance selection (10).

In any case these patients must be considered very frail and must be protected with a very high standard of environmental hygiene and clinical performance (10).

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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