



# Enfermedades Infecciosas y Microbiología Clínica

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## Editorial

### SARS-CoV-2 infection among hospital workers. What about us?

### Infección por SARS-CoV-2 en profesionales hospitalarios, ¿qué hay de lo nuestro?



In March 2020, the foundations of the Spanish health system were shaken by a pandemic that has changed our lifestyle and transformed our exchanges on a global scale.<sup>1</sup> A year later, on March the 10th 2021, 2.6 million people had died from COVID worldwide and almost 72,000 in Spain.<sup>2</sup> Our country has ranked fifth in the world in terms of mortality per 100,000 inhabitants, only behind the Czech Republic, the United Kingdom, Italy and the United States, with an excess mortality of 47,000 persons in 2020.<sup>3</sup>

The cost to healthcare workers has been enormous. It is currently estimated that at least 17,000 healthcare workers have died from COVID worldwide.<sup>4</sup> According to the Pan American Health Organization (PAHO), in America alone, some 570,000 health care workers (HCW) have been infected and 2500 have died.<sup>5</sup> In our country, up to the beginning of March 2021, a total of 125,691 HCW had been infected, of which 63 had died until June 2020.<sup>6</sup> To these figures we must add the impact on health and long-term sequelae. It has been reported that three out of four of COVID patients admitted to hospital may present dyspnea or muscle weakness up to 6 months after discharge<sup>7</sup> and it is also known that there are variety of symptoms that can appear after the infection and are grouped under the term *long covid* or prolonged covid syndrome, including mental disturbances, depression, difficulty in concentrating and other neurological disorders.<sup>8</sup> During the pandemic, many infected workers had to isolate themselves from their families and the fear of infecting them was associated with anxiety and feelings of guilt.<sup>9</sup>

The situation that occurred in the months of March and April 2020 in many Spanish hospitals was catastrophic. In some centers, a mortality rate of 30% was reached in admitted patients,<sup>10</sup> with the emergency services overwhelmed and patients occupying corridors, libraries, gyms and even cafeterias. Due to the lack of initial scientific evidence on the route of transmission,<sup>11,12</sup> and to the global problems in the supply of protective material,<sup>13</sup> masks began to be used on a massive scale within the hospital when the infection had already been established and the virus was transmitted through the closed institutions. As the pandemic accelerated in early March, access to personal protective equipment (PPE) for workers was in short supply, was lacking in many centers, or did not meet minimum requirements to ensure user safety.<sup>13</sup> At first, healthcare personnel in the front line of patient care were infected,

but later the virus spread and ended up affecting non-healthcare personnel to a great extent as well.<sup>14</sup>

This issue of the journal presents two seroprevalence studies carried out in Spanish hospitals after the first pandemic wave. The results vary between a prevalence of antibodies of 6.6% described by Gras-Valenti et al. in a total of 4179 workers<sup>15</sup> from Alicante and 31% in 2590 workers from Madrid.<sup>16</sup> These two studies differ in the type of personnel studied (hospital and primary care personnel vs hospital), the serological parameters determined (IgG, IgM/IgA vs IgG) and the prevalence of COVID in the general population of the hospital environment, variables that could explain the differences in infection rates. Seroprevalence studies have been published in other hospitals in our country with disparate results, from 11% in a study carried out a few weeks after the start of the pandemic in a large university hospital,<sup>17</sup> to 37% in another study carried out in a hospital in Madrid, where the first wave had a strong impact<sup>14</sup> and the percentage of infection was determined taking into account not only the serological study, but also the previous diagnoses made by PCR.<sup>18,19</sup> The role of asymptomatic infection as an amplifying factor of infection in a closed institution is well reflected in the series by Galán et al.<sup>16</sup> where it is shown how up to 48.5% of the seropositive workers did not present any symptoms.

Serological studies in health workers played a very important role in the first months of the pandemic. When there were no effective treatments or vaccines in sight, the hospital staff wanted to know if he/she had developed immunity to know his risk of infection and transmission to the family environment.<sup>9</sup> However, the initial uncertainty about the protective meaning of the antibodies and the doubts regarding the reliability of the technologies that were progressively available (rapid tests in lateral flow format, ELISA and CLIA)<sup>20</sup> delayed the availability of the results. The arrival on the market of imported reagents, acquired in many cases without the endorsement of analytical or clinical validation studies, initially generated many problems, not only in Spain. In the United Kingdom, for example, the government immobilized a purchase of several million rapid tests due to poor sensitivity and specificity, which showed that it did not correspond to what the package insert indicated.<sup>21</sup> However, it has already been proven that some rapid tests had a similar performance to ELISAs test for detecting IgG from the 3–4 week after the onset of symptoms and can be very useful for serosurveys when no other techniques are available, as it was shown in the ENE-COVID study and others carried out after the first wave of the pandemic.<sup>18</sup> In this sense, it is essential to guaran-

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tee the capacity of Clinical Microbiology laboratories to carry out analytical and clinical validation studies of new reagents quickly and independently before starting their clinical use.

We do not yet know how long this pandemic will continue and neither if any of the variants of the SARS-CoV-2 virus will continue to circulate for many years. In any case, it is clear that the protection of healthcare personnel must be an absolute priority in the future and it is very likely that some current established practices will continue for months or years, such as the use of masks and PPE in some areas of hospitals or the establishment of clean and dirty circuits. Another fundamental aspect will also be to have a truly functional and operational National Pandemic Preparedness and Reaction Plan, which should include such basic aspects as the establishment of sufficient reserves of protection material and the strengthening of Public Health Networks. In addition, another priority objective should be investment in R&D in Health Sciences and, in the healthcare field, to increase the diagnostic capacity of Clinical Microbiology Laboratories, reinforcing such aspects as continuous 24/7 care and molecular diagnosis, and also improving the sequencing capacity and developing a National Strategy for Digital Health.

Although in most of the countries of the Northern Hemisphere all health personnel are already vaccinated, we must not forget that in the rest of the planet, health workers continue to be exposed to the virus every day in very difficult conditions. Although the COVAX initiative (COVID-19 Vaccine Global Access)<sup>22</sup> was born with the objective that all countries have equitable access to vaccines, the reality has been very different and it was not until the end of February that the first shipments of the AstraZeneca vaccine arrived to the African continent in Ghana and Ivory Coast.<sup>23</sup> It is our obligation to contribute in solidarity to ensure that most of the world's population is vaccinated as soon as possible, since we can only get out of this pandemic together.

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