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EDITORIAL ARTICLE

Medico-legal issues of COVID-19 pandemic☆

Aspectos médico-legales de la pandemia por COVID-19

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The discovery of the new coronavirus has its origin in Huanan wholesale market for shellfish, fish and live animals, located in the Chinese city of Wuhan in the province of Hubei. The first case reported was that of a market worker who was admitted to hospital on 26 December 2019 with severe pneumonia and respiratory failure. On 31 December the regional office in China of the World Health Organisation (WHO) was informed of several cases of pneumonia with an unknown origin in the city of Wuhan.[1] On 12 January 2020 China shared the genetic sequence of a new coronavirus. It was denominated SARS-CoV-2 and the disease it causes was termed *Coronavirus Disease 2019* (COVID-19). The first WHO report on 20 January confirmed 282 cases, the majority in Hubei province, with 6 deaths and international expansion, with the first cases in Thailand, Japan and South Korea.[2] At the close of this editorial (20 May 2020), the last report by the WHO on the situation of COVID-19 reports 4,731,458 cases in the world, with 316,169 deaths.[3].

In Spain, by 19 May 232,037 PCR-confirmed cases of COVID-19 had been reported, together with 27,778 deaths.[4] It is the European country with the third largest number of cases and is fourth in terms of the number of deaths, with a lethality rate estimated to stand at 12% of confirmed cases (below the rates in France, Belgium, the United Kingdom, Italy, the Netherlands and Sweden). At world level it is the fifth country in the ranking of the number of cases and deaths. The high number of infected medical workers stands out in Spain (39,349). These amount to 22.3% of the cases of COVID-19 reported to the National Network of Epidemiological Monitoring (RENAVE) with a clear predominance of women (76%).[5]

Reading the two previous paragraphs shows the vertiginous speed with which we experienced the rapid international spread of the virus, in which Spain was one of the main countries to be affected. Different parts of the country were affected to different degrees, and Spain, like other countries, has required a social lockdown such as never been seen before in recent history. The healthcare system suffered an enormous impact due to the high demand for care due to patients with COVID-19 and because of the initial lack of knowledge about this pathology, which meant that extraordinary measures had to be adopted to prevent the system from collapsing. Although the pandemic curve has now been flattened, we are still immersed in a medical crisis that has led to a social and economic crisis, with an enormous impact on the population that may lead to a severe worldwide humanitarian crisis.

Due to the national and international situation with COVID-19, at the beginning of April the editorial team of the *Revista Española de Medicina Legal* (REML) decided to make this edition a monograph on the medical and legal aspects of the pandemic. The aim is to offer readers a com-

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pendium of the most relevant information in our field, based on the huge amount of scientific production in national and international biomedical journals. This is not the first monograph to be published by the REML, as these have covered subjects such as gender-based violence,[6] suicide,[7] the new criterion for traffic accidents in 2015,[8] sudden death due to cardiac causes[9] or forensic psychiatry.[10] Given the exceptional nature of this situation and the importance of making the contents available as soon as possible, it was decided that the editorial team would review the manuscripts rather than external reviewers. We would like to sincerely thank the authors for their generous collaboration in this monograph, and we hope that it will be both useful and interesting for REML readers.

We also decided that the monograph would cover medical-legal problems as well as strictly medical-forensic questions. This is why it covers such a broad range of subjects. Bañón et al.[11] analyse autopsies of COVID-19 cases in a paper that brings the subject right up-to-date in comparison with publications up to now. González-Fernández et al. cover the management of corpses during a pandemic.[12] The region which suffered the highest rate of infections in Spain was the Community of Madrid. Andreu and Donat describe the specific response of the Legal Medicine and Forensic Sciences Institute (*Instituto de Medicina Legal y Ciencias Forenses*) of the Community of Madrid, which had commenced working just before the pandemic struck.[13]

Certification of death during the COVID-19 pandemic has been one of the central themes, in WHO recommendations as well as the note prepared by the General Board of Official Doctors' Associations in Spain (*General de Colegios Oficiales de Médicos de España*).[14] Analysis of mortality is one of the cornerstones of epidemiology, and it has to be used as a guide that makes it possible to reach decisions and implement measures that are more effective means of controlling the current COVID-19 pandemic.[15] The quality of information in the Medical Death Certificate (MDC) is crucial in this respect and, as is the case in Spain, the document has to meet WHO recommendations.[16] Teijeira et al. describe the medical-legal, ethics and practical aspects of the certification of death, and they refer specifically to this certification during a pandemic.[17] They include one of the outstanding questions in our country: sending MDC to the Civil Registration Offices (CRO) by data transmission, which would speed up the transmission of information relating to causes of death, an especially important aspect during an epidemic. Fernández et al. undertake an excellent review of the microbiological aspects of COVID-19. The section on the *post mortem* detection of SARS-CoV-2 and its applicability is especially innovative.[18]

The impact on the healthcare sector in Spain has been tremendous. Due to this, two papers examine this repercussion specifically. Martin-Fumadó et al. do so from a bioethical and professional ethics viewpoint. They examine the difficult clinical decisions that have to be made, within the context of an overwhelmed medical system and the rationing of resources, above all at the start of the crisis within the context of hospitals.[19] Martí-Amengual et al., in a context in which 65% of infected medical professionals had an epidemiological history of the risk of contact with patients who had a respiratory infection, while 69% had been in close contact with probable or confirmed COVID-19 cases[5], argue that the legal consideration of this infection should be as an occupational disease, with all of the resulting repercussions in terms of disability, sequelae and death.[20]

Lorente-Acosta describes the problem of increasing gender-based violence associated with the lockdown and how it amplifies its components. There was a striking increase in this violence after lockdown.[21] Other medical-legal subjects of interest that it was not possible to cover include the involuntary internment of COVID-19 patients for public health reasons (based on Law 3/1986 and processed by an Administrative Contentious Court according to article 8.6 of Law 29/1998),[22,23] as well as the problem of medical-psychological care for those sectioned with mental disease during the pandemic.[24]

Due to their association with medical-forensic work, we must also refer to two subjects that were of central importance during this crisis: performing autopsies and mortality data. On 5 March the technical document of the Ministry of Health was published ''Procedure for the management of COVID-19 corpses'' with subsequent modifications.[25] Although it refers to clinical autopsies, this document set the tendency as it recommended not performing autopsies in positive cases for COVID-19, so that the general form of action in our country was to avoid performing internal examinations. Given that forensic autopsies are one of the essential services of the Ministry of Justice, the Forensic Medical Board also recommended reducing the handling and transport of corpses subjected to judicial investigation to the indispensible minimum, although it recommended that the Legal Medicine and Forensic Sciences Institutes (IMLCF) set their own protocols.[26] All of this in the context of a crisis which reduced the number of medical-legal autopsies, above all those due to accidental causes, as is described in Madrid.[13] Likewise in Milan (Italy) a 70% fall in medical-legal autopsies was observed during the crisis.[27]

The recommendation no to perform autopsies was controversial to a certain degree. The Spanish Society of Pathology published a press release on 21 April explaining the arguments for the initial recommendation and also making it more flexible.[28] This was also because of the important role that autopsy may play in gaining knowledge of many aspects of the disease.[29] This question was also debated in Italy.[30]

The subject of mortality was also highly controversial. Teijeira et al. refer to this in their final section.[17] There were delays in sending demographic information based on inscriptions in the CRO, and one of the affected institutions was the National Epidemiology Centre of the Carlos III Health Institute. The National Epidemiology Centre maintains the daily Mortality Monitoring System (MoMo), which identifies deviations in daily mortality for all causes from what would be expected based on historical series. It obtains this data from the Ministry of Justice General Registry of Civil and Notaries Registries that receives computerised CRO data through the *Inforeg* platform. There are 3929 CRO, covering 93% of the Spanish population.[31] MoMo estimates that there was an increase in mortality in the period from 17 March to 5 May 2020, with an excess of 30,604 deaths (a 55.7% increase), most especially of people over the age of 65 years old. Although all of the Autonomous Communities showed an increase in mortality, the percentage of increase

varied, as did the time period. Although their reports take the delay in notification into account, the increase in deaths and the fall in the number of CRO staff due to the crisis hindered the daily updating of this information. In response to this, the General Board of Judicial Security and Public Trust of the Ministry of Justice gave instructions to speed up and increase the accuracy of data about the number of deaths and where they had occurred. These instructions were to send a list every day of the number of deaths recorded by the Registry, the number of burial licences granted, and the place of death, specifying the locality and place (hospital, care home or usual domicile).[32]

These measures refer to the number of deaths, but not to their causes. MDC are sent every month by the CRO to the provincial offices of the National Institute of Statistics (INE). In turn this sends them every month to the Mortality Registries of the Autonomous Communities, which code the basic cause of death according to the norms of the tenth edition of the Internal Classification of Diseases (CID-10) and then send the information to the INE. The INE then processes and assigns these data and generates annual Statistical Death Files according to cause of death, which are published annually. The INE places the definitive file of deaths which have occurred in the territory each Community at the disposal of the same, as well as those showing the deaths of residents in the other autonomous communities. Additionally, the Mortality Registries draw up their own mortality reports. Nevertheless, in an epidemic crisis it is necessary to establish a specific mortality monitoring system that makes it possible to know the causes of all deaths almost immediately. This was not implemented in a general way in our country, and this is a function in which forensic doctors and the IMLCF could play a major role. There was a good initiative in the Autonomous Community of Castile y León where, taking advantage of the function of forensic doctors in supervising MDC, they informed the General Board of Health of the Regional Government of Castile y León of all of the deaths that had occurred (age, sex, causes and place of death). It should be remembered that, in the context of deaths with judicial intervention, the IMLCF already cooperate satisfactorily with the INE in improving the quality of cause of death reporting by using an online platform,[33] given the beneficial impact of this cooperation.[34] The participation of forensic doctors and the IMLCF in specific mortality monitoring circuits would be a highly interesting option for cooperation with the Health Ministry in a second wave of the virus in autumn or in new medical crises, and this would raise the social and medical profile of forensic medicine, emphasising its value.[35]

To conclude, we hope that this monograph on COVID-19, published by the *Revista Española de Medicina Legal*, will interest forensic doctors and doctors who specialise in legal medicine, as well as the scientific and medical community in general, given that the papers it contains are currently of great interest.

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