



## EDITORIAL

# What has happened to care during the COVID-19 pandemic? ☆



## ¿Qué ha sucedido con los cuidados durante la pandemia COVID-19?

Work Group (WG) Authors, Spanish Society of Intensive Nursing and Coronary Units (SEEIUC for its initials in Spanish):

Between the middle of March and the beginning of April, subject to the Autonomous Community (AC), the Intensive Care Units (ICU) reached their occupancy peak. New express ICUs had to be created with new nurses who had had no training in critical care to attend to the patients diagnosed with COVID-19, most of whom were extremely seriously ill. Also, as suggested by Raurell-Torredà "this meant that the concept of team had to change and supplant any previous realities".<sup>1</sup>

The high risk to the health of healthcare professionals, and the impairment in levels of patient safety led to the emergence of on-line training activities and the use of simulation which proved to be beneficial on three levels during the pandemic:<sup>2</sup> 1) Educational: staff were rapidly trained; 2) Systematic: this helped lead to an understanding and optimization of workflows; 3) Personal: support for emotional management was offered to the professionals.

On an international level different training programmes have been described using simulation and the training of healthcare professions in taking nasopharyngeal secretion samples<sup>3</sup> and online simulation based on the use of videos.<sup>4</sup> In Spain we found different initiatives were in place, such as that in the University Hospital la Paz, where a virtual platform was created using videos with simulated patients.<sup>5</sup> The **Simulation-WG** of the Spanish Society of Intensive Nursing and Coronary Units Nursing (SEEIUC), was implemented in the Hospital 12 de Octubre in Madrid. This programme used a platform with virtual training contents (videos, computer graphics, simulators and pandemic procedure protocols) which was complemented by ICU simulation where a simu-

lated space was improvised in which staff could be trained in the use of personal protection equipment (PPE) as well as essential care for the critically ill COVID-19 patient (mechanical ventilation, haemodynamic monitoring and purifying techniques).

Sadly, despite the efforts to rapidly train new nurses in knowledge and skills which usually require years of post-graduate study, the healthcare reality took over. The care procedures required for patient survival had to be prioritised and strategies which had proven their effectiveness through evidence over the last few years, such as the ABCDEF<sup>6</sup> control flow and the Zero<sup>7</sup> projects remained in the background, due to care overload, lack of training of the new interprofessional ICU team members, inadequacy of physical spaces to carry out daily activities and the shortage of consumables.

As stated by the Advisory Board of the Critical Patient Safety Programme of the Ministry of Health,<sup>8</sup> made up of SEEIUC members and members of the Spanish Society of Critical, Intensive and Coronary Medicine Units (SEMICYUC for its initials in Spanish), "although no official data are available on the infections relating to health care in COVID-19 patients, staff who have cared for these patients perceive of a major increase in bacteraemia linked to catheters or of unknown origin, unitary infections linked to urethral catheters, respiratory infections during mechanic ventilation and infected pressure ulcers."

The **Analgesia, Sedation, delirium and medical restraint WG** (ASCyD for its initials in Spanish) of the SEEIUC, considers that the assessment of appropriate levels of analgesia and sedation were not able to be a priority care issue. As in any intubated patient, analgesia and sedation needs were covered according to their severity, although in these patients choice of analgesics and sedatives was conditioned by shortages and which ones were available. In the most acute phase, the initial volume of admissions, all extremely severe, led to deep sedation levels which went perhaps beyond what was strictly necessary and due to the impossibility of pain assessment due to high levels of sedation and the administration of muscle relaxants.

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Assessment of sedation depth was further complicated by the recently incorporated professionals' lack of knowledge of sedation scale assessment and the absence of BIS® monitors which are useful for assessing sedation in patients with muscle relaxation. Aggressive techniques, such as the patient lying in a prone position for a prolonged period or recruitment strategies, have been continuous and have hindered compliance with recommended practices, such as progressing towards more superficial sedation levels or waking up the patient daily.

Despite the deep sedation levels and high use of muscles relaxants, the use of mechanical medical restraint was high, due to overburden of work, the absence of family members and the fear of not being able to provide a rapid response to an attempt at self-extubation. If expert ICU nurses find it difficult to accept that restraint is not the solution, it is impossible to make non expert nurses who feel insecure and clearly out of their depth to understand. How can we risk allowing the patient to remove the tube?

All predisposing factors to delirium were present, added to which was the uncertainty of an unknown future prospect for staff and conscious patients, with non invasive respiratory devices or who were in the process of waking up, who faced the prospect of the chaos they observed.

Patients were often admitted to "field" hospital units, where they were cared for by overstretched healthcare professions, totally covered in PPE, and could see themselves reflected in other seriously ill patients who were beside them, co-existing in dramatic circumstances. In this context, where the patient was socially isolated and facing great uncertainty, instead of a tranquil or secure ambience delirium was far more likely to ensue.

The Rehabilitation WG of SEEIUC states that the rehabilitation services were reorganized to respond to all patients who required physiotherapy, increasing the number of professionals, with the availability of a specialized physiotherapist in each team. In some cases interconsultation was withdrawn and care was even increased from Monday to Sunday, aimed at providing recovery to the patients so that they could be discharged as soon as possible. With regards to the treatment administered to the patients, major issues were discussed:

- Time in the prone position and with mechanical ventilation, which in some patients was increased and went on for longer than anticipated.
- Changes in the ventilator parameters and the way in which they could influence early mobilisation and respiratory physiotherapy.
- Major desaturations prior to active mobilisation and physical exercise, opting for a more progressive therapy, with shorter but more frequent sessions.
- Sitting, standing and/or verticalisation of the patient and the use of appropriate oxygen therapy systems for carrying out effective treatment of early mobilisation and respiratory physiotherapy, trying to prevent intensifications and trying to prevent the ICU acquired weakness (ICUAW) which in several cases was highly severe.
- Management of secretions and distribution of aerosols.

All of these questions and the need to resolve them encouraged communication and the active participation of

the interprofessional team. This interaction has enabled visibility of the need for definitive integration of the physiotherapist to the ICU team, and the highlight that early mobilization is an essential tool in critical care patient approach.

According to the **Bioethics WG**, the initial application of strict isolation which involved greater social distancing (restriction of visits), together with the lack of PPE and the need to adapt to new forms of procedures, impeded the inclusion of family members in the care process, leading to greater uncertainty, stress, anxiety, guilt and fear.<sup>9</sup> The establishment of clear, appropriate and regular communication is essential for facilitating adaptation,<sup>10</sup> leading to initiatives which made virtual connection possible. If the patient status allowed it, video-calls were allowed, so as to connect them with their families, and this was one of the most positive aspects for the patients, families and professionals

Life-support treatment limitations (LSTL) must take into account patient prognosis, futility of treatment and the taking of shared decisions, with participation from the nurse being mandatory to provide the palliative viewpoint leading to the detection of those patients who are going through an end of life process, so that therapeutic obstinacy<sup>11,12</sup> may be avoided. What may be a complex decision was greatly simplified with COVID-19 patients because it was highly evident when treatment did not work. When this happened the patient was in a very severe condition. Perhaps the greatest ethical conflict was about the patients who were not admitted to the ICU, not for LSTL criteria, but due to the lack of available resources, leading to a huge emotional burden for healthcare workers.

Regarding care during continuous replacement therapies, the **extracorporeal therapies WG** of SEEIUC conducted an informal survey among several hospitals in Spain, confirming that the incidence of acute kidney failure notably increased. Research studies related to corticoid treatments, with chloroquines and other drugs gradually clarified the relationship or non relationship with the apparently increased acute tubular injury in this context.<sup>13</sup> Several patients were highly procoagulant, and suffered from significant thrombosis, including with the use of continuous extracorporeal circuit techniques. For ICU nurses, whose number had to be increased due to a higher number of beds, caring for patients who were mostly in a prone position with an array of connected purification systems has been a challenge. An attempt was made to insert catheters into the right jugular vein but this was not always possible. The interpretation of the pressure circuit and the sound maintenance of this vital technique with no delayed risks were essential for these patients. The choice of anticoagulation and optimal dose titration was crucial. If all ICU had been well provided with staff trained in the use of filter citrate input, the maintenance of this therapy may have been more operative.

Another difficult issue which was however resolved in most cases, was the availability of consumables. Working with filters of a larger or smaller size than desired or without monitors in hospitals which did not usually use these systems so frequently posed a genuinely important management problem in some locations. This resulted in the professional assessing the need for treatments and the optimisation of liquids and consumables to offer each patient the best care. Repeated coagulations, continuous patient isolation and the

simultaneous lack of staff trained in this technique posed a massive challenge to us.

The ECMO-WG observed from the start that several problems arose with regard to extracorporeal membrane oxygenation support treatment (ECMO) in patients with serious acute respiratory distress syndrome (ARDS), who were refractory to standard treatment, in the context of COVID-19. Although there have been previous experiences with patient management with refractory ARDS to other treatments during an epidemic (SARS, virus H1N1, MERS)<sup>14</sup> and the *Extracorporeal Life Support Organization* (ELSO) published a guide for recommendations of ECMO support in patients with coronavirus,<sup>15</sup> the rapid explosion of this epidemic in some Autonomous Communities resulted in different forms of organization with highly disparate results, both on a regional and institutional level:

- Benchmark ECMO Units with a well defined team (*ECMO-Team*) were able to quickly implement this therapy to a larger number of patients and to adapt care required by this type of patient with the COVID pathology. In ACs with these *ECMO-Teams* patients were transferred to other hospitals for therapy, since they already had a previously established circuit, complying with the recommendations of Ramathan and collaborators of implementing ECMO in benchmark centres.<sup>16</sup> These benchmark hospitals with the established ECMO programme specified that during times of high concentrations of cases, the nurses specialised in ECMO worked on shifts outside of their regular hours to guarantee quality of care.

- In other centres, expert ECMO nurses were unable to provide care to all the patients with this therapy and were forced to supervise care for these patients carried out by other nurses, as recommended by the ELSO guideline.<sup>15</sup> However, in other hospitals, the care of these patients fell to nurses with greater experience or expertise. In some hospitals, to minimize the exposure of professionals and optimize the use of the PPE, but maintain patient safety, the presence of ECMO specialists around the pump and the controls were adapted according to the situation of the patients and the ICU structure.

Special attention was given to the coagulation management of these patients. This is in itself complicated, but was made more so by the complexity of the behaviour of this virus for its inflammatory response and the thrombotic changes it provokes.

As a scientific society for the care of the critically ill patient, SEEIUC requests that healthcare organisations reconsider the urgent need to provide ICU staff with a speciality that provides robustness to the nursing profession. Theoretical and practical knowledge in care and techniques that are vital to the safety and recovery of these patients must be included.

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