**Conclusion:** Engagement of key stakeholders is essential to create a streamlined TSY pathway for COVID-19 pts. Clarity and agreement between multiple specialties has helped provide an effective service without an increased infection risk to staff.

**Reference(s) and grant ackowledgment(s)**

1. National tracheostomy safety program guidelines http://www.tracheostomy.org.uk/storage/files/Multidisciplinary%20COVID_19%20tracheostomy%20guidance%2030_4_20.pdf
2. Nil

### 000513

**Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 does not differ from other causes of ARDS**

GS. Angeles[1]; L. Zattera[2]; C. Sole[1]; A. Fernandez[1]; C. De Peray[1]; P. Benet[1]; T. Ramis[1]; O. Comino[1]; J. Aliaga[1]; A. Fervienza[1]; D. Forne[1]; M. Arias[1]; R. Mellado Artigas[3]; C. Ferrando[3]

[1]Anaesthesiology, Hospital Clínic de Barcelona, Barcelona, Spain; [2]Anaesthesiology, Hospital del Mar, Barcelona, Spain; [3]Anaesthesiology, critical care unit, Hospital Clínic de Barcelona, Barcelona, Spain

**Correspondence:** G.S. Angeles

*Intensive Care Medicine Experimental* 2020, **8(2)**: 000513

**Introduction:** Specific respiratory features, ventilatory management, and outcomes of patients with acute respiratory distress syndrome (ARDS) caused by coronavirus disease 2019 (COVID-19) have not been well established yet.

**Objectives:** The aim of this observational study was to describe characteristics of confirmed ARDS COVID-19 patients that received invasive mechanical ventilation (MV) and other adjunctive therapies.

**Methods:** From March 12th to April 8th 2020, this prospective, multicenter, observational, cohort study enrolled patients with COVID-19 ARDS admitted to the ICU, in 28 hospitals, with a 28-day follow up. Patient medical data were collected into an anonymized online data acquisition system (CoVid19.ubikare.io). Inclusion criteria: > 18 y/o, intubated and mechanically ventilated, confirmed SARS-CoV-2 infection using PCR-based tests, and ARDS, as defined by the Berlin criteria. Recorded data included demographics, ventilator parameters, adjunctive therapies, disease chronology (initiation of MV, ventilator-free-days, ICU-length-of-stay), discharge from ICU and 28-day mortality. Patients were stratified by severity of ARDS. Descriptive variables were expressed as percentage, mean and standard deviation (SD), or median and interquartile range (IQR), as appropriate. To compare variables, Student t-test or Mann-Whitney test and one-way ANOVA or Kruskal-Wallis test for numerical variables, and Chi squared test or Fisher exact test for categorical variables were used. Time to event curves were plotted using the Kaplan-Meier method and analyzed with log-rank test and univariable Cox regression analysis.

**Results:** A total of 504 patients were included: 96 (19.0%) with mild, 235 (46.6%) with moderate, and 173 (34.3%) with severe ARDS. Median (IQR) values were: $PaO_2/FiO_2$ 127 (88-182) mmHg, VT 6.9 (6.3–7.8) ml/kg PBW, PEEP 12 (10-14) $cmH_2O$, Crs 35 (28-45) $ml/cmH_2O$, Pplat 24 (20-28) $cmH_2O$, and driving pressure 12 (9-14) $cmH_2O$. Recruitment maneuvers (RM) were used in 414 (82%) without differences between groups. Prone position was used in 385 (76%) patients, and neuromuscular blocking agents (NMBA) were used in 340 (66%) patients. Degree of ARDS severity was associated with significant differences in the use of prone position (p = 0.001) and NMBA (p = 0.008). There was a higher likelihood of discontinuation of MV (p = 0.006), ICU discharge (p = 0.010) and 28-day survival (p = 0.004) with decreasing severity of ARDS. All-cause 28-day mortality was 18% (94 patients). The risk of 28-day mortality was higher in severe ARDS compared to moderate ARDS [hazard ratio (RR) 0.47 (95%CI: 0.30-0.76), p = 0.002].

**Conclusion:** On average, in this large series, COVID-19 ARDS patients were managed with standard practice of lung-protective mechanical ventilation frequently associated to RM and prone position. General clinical features, ventilatory management, and 28-day outcome did not differ from other causes of ARDS. The degree of ARDS severity was a significant prognostic factor.

**Reference(s) and grant ackowledgment(s)**

1. Bellani G, Laffey JG, Pham T, et al. Epidemiology, patterns of care, and mortality for patients with acute respiratory distress syndrome in intensive care units in 50 countries. JAMA 2016; 315:788-800.
2. Ranieri VM, Rubenfeld GD, Thompson BT, et al; ARDS Definition Task Force. Acute respiratory distress syndrome: the Berlin Definition. JAMA. 2012;307(23):2526-2533.

### 000534

**Experience with COVID-19 related severe acute respiratory distress syndrome (ARDS) patients admitted to a medical Intensive Care Unit in a second-level university Hospital**

I. Gallego Barbachano[1]; A. Ortega Montes[1]; E. Moreno Lopez[2]; JL. Martinez Melgar[1]; E. Sanmartin Mantiñan[1]; T. Sanchez De Dios[1]; A. De La Campa Gestido[1]; JI. Cenoz Osinaga[1]; JV. Bravo Doviso[1]; P. Posada Gonzalez[1]

[1]Intensive care unit, Complexo Hospitalario Universitario De Pontevedra, Pontevedra, Spain; [2]Anaesthesia and postoperative care, Complexo Hospitalario Universitario De Ferrol, Ferrol, Spain

**Correspondence:** E. Moreno Lopez

*Intensive Care Medicine Experimental* 2020, **8(2)**: 000534

**Introduction:** A new coronavirus (SARS-CoV-2) emerged from China in December 2019 causing an severe acute respiratory distress syndrome (ARDS) that rapidly spread to become a pandemic.

**Objectives:** To describe patients admitted to a medical Intensive Care Unit (ICU) in a second-level university Hospital due to severe ARDS related to COVID-19 infection.

**Methods:** Retrospective and descriptive analysis between March and April 2020 of critically ill patients with COVID-19-related severe acute respiratory distress syndrome admitted to a medical ICU. The following parameters were analyzed: demographic values (gender, age, severity scores, comorbidities), hemodinamic instability, renal failure, respiratory failure (ventilatory mode, $FiO_2$ level, PEEP, prone ventilation, continuous neuromuscular blockade (NMB), endotracheal tube exchange, tracheostomy, days spent under mechanical ventilation), laboratory parameters (lactate dehydrogenase (LDH), low white blood cell (WBC) count, C-reactive protein (CRP), D-dimer, serum ferritine), length of ICU stay and outcomes.

**Results:** 22 patients (19 male, 3 female) were admitted, mean age: 67 ± 6,1 ( < 60 years old:4, 60-70 years old: 13 (59%), > 70 years old: 7). APACHE II score: 26 ± 7, SOFA : 7,5 ± 1,9. Comorbidities: chronic airflow limitation (CAL): 4, obesity (BMI > 30): 5 (22,7%), hypertension: 13 (59%), diabetes: 4. Inotropic support: 6 (27,3%), renal failure (continuous renal replacement therapy(CRRT)): 3 (13,7%), respiratory support: 22 (100%), ventilatory mode: pressure 14 (64%), volumen 8, $FiO_2$ (max): < 0.6: 5, between 0.6-0.8: 12 (54,5%), > 0.8: 5. PEEP (max): < 9 $cmH_2O$:3, between 9-12: 13 (60%), > 12: 6. Prone ventiltation: 18 (81%): within the first 24 hours:8, after 24 hours: 10. Continuous NMB: 14 (64%). Reintubation: 4 (18%), endotracheal tube exchange (obstruction):7 (32%), tracheostomy:5 (22,7%), 4 surgical tracheostomy (3 difficult airway, 1 coagulopathy), 1 percutaneous. Time spent under mechanical ventilation: 18 ± 8,5 days. Laboratory parameters: 14 LDH, 10 low WBC count, 19 (86%) CPR, 18 (81%) D-dimer, 19 (86%) serum ferritine. Length of ICU stay: 19,8 ±8 days. Outcome: 18 (81,8%) discharged (alive), 3 deaths, 1 still in ICU.

**Conclusion:** According to our series, the type of patient admitted with COVID-19 related severe acute respiratory distress syndrome (ARDS) was a male between 60-70 years old, with hypertension and/or obesity, under mechanical ventilation (pressure mode:64%) and $FiO_2$ (within the first 24 hours): 0.6-0.8 (54,5%), PEEP 9-12 $cmH_2O$ (60%), in prone positioning (81%) and continuous NMB infusion (64%), requiring tracheostomy (22,7%) and a 81,8% of survival rate.