Article

Severity patterns in COVID-19 hospitalized patients in Spain. I-MOVE-COVID-19 study.

**Appendix A**

**Figure A1**. Spanish COVID-19 hospitalised cases by age and sex (I-MOVE-COVID19 study).

**Table A1**. Factors associated with death in Spanish COVID-19 hospitalised patients (I-MOVE-COVID19 study).

|  | **Dead**  309 (15.1%) | **Alive**  1740 (84.9%) | **p value** | **Crude OR (IC95%)** |
| --- | --- | --- | --- | --- |
| **Sociodemographic and clinical factors** | | | | |
| Age, grouped (0-39; 40-64; 65-84; 85+ years) |  |  | **<0.001** | **0.00 (6.6e-4 – 0.03)** |
| Age 0-39 years | 1 (0.3) | 214 (12.3) |  | (reference) |
| Age 40-64 years | 38 (12.3) | 772 (44.4) | **0.020** | **10.53 (1.44-77.00)** |
| Age 65-85 years | 142 (46.1) | 580 (38.3) | **<0.001** | **52.4 (7.30-376.04)** |
| Age 85+ years | 127 (41.2) | 174 (10) | **<0.001** | **156.19 (21.66-1126.38)** |
| Sex (men) | 171 (55.3) | 918 (52.8) | 0.402 | 1.11 (0.87-1.42) |
| Centre (HUVN) | 126 (40.8) | 706 (40.6) | 0.947 | 1.01 (0.79-1.29) |
| Covid-19 vaccinated | 182 (20.3) | 33 (26.0) | 0.140 | 1.38 (0.90-2.12) |
| Flu vaccinated | **611 (35.4)** | **182 (59.9)** | **<0.001** | **2.72 (2.12-3.49)** |
| Number of previous hospitalizations (last year), mean ± SD | 3.3 ± 4.7 | 2.2 ± 2.3 | 0.189 | 1.10 (0.95-1.30) |
| Number of previous medical visits (last year), mean ± SD | **10.2 ± 7.9** | **6.3 ± 6.9** | **<0.001** | **1.06 (1.03-1.09)** |
| Previous medical visits last year >12 | **25 (33.8)** | **64 (12.5)** | **<0.001** | **3.56 (2.06-6.17)** |
| **Outcomes** | | | | |
| ICU stay (%) | **63 (20.5)** | **116 (6.7)** | **<0.001** | **3.57 (2.55-4.99)** |
| Need for ventilation | **180 (58.8)** | **368 (21.7)** | **<0.001** | **5.16 (4.00-6.66)** |
| **Time between events** | | | | |
| Days from admission to ICU, mean ± SD | **4.5 ± 4.4** | **3.4 ± 2.4** | **0.050** | **1.10 (1.00-1.22)** |
| Days from admission to ICU >7 | **8 (12.7)** | **6 (5.2)** | **0.073** | **2.67 (0.882-8.07)** |
| Days from onset to admission, mean ± SD | 5.0 ± 3.5 | 6.8 ± 13.3 | 0.142 | 0.98 (0.96-1.00) |
| Days from onset to ICU, mean ± SD | 9.9 ± 5.7 | 9.8 ± 3.8 | 0.873 | 1.00 (0.94-1.08) |
| Days of ICU stay, mean ± SD | 26.2 ± 18.0 | 22.8 ± 21.2 | 0.304 | 1.00 (0.99-1.02) |
| Days of stay, mean ± SD | **14.8 ± 14.1** | **11.8 ± 14.6** | **0.006** | **1.01 (1.00-1.20)** |
| Days of stay > 7 | 193 (65.2) | 1055 (60.7) | 0.142 | 1.21 (0.94-1.57) |
| **Underlying conditions** | | | | |
| Number of chronic diseases, mean ± SD | **2.9 ± 5.3** | **2.5 ± 1.8** | **<0.001** | **1.50 (1.37-1.64)** |
| Anaemia | **50 (17.0)** | **191 (10.9)** | **<0.008** | **1.58 (1.12-2.21)** |
| Asthma | 26 (8.8) | 145 (8.3) | 0.941 | 1.02 (0.66-1.57) |
| Body mass index (BMI), mean ± SD | 29.3 ± 5.3 | 29.4 ± 5.8 | 0.855 | 1.00 (1.00-1.00) |
| Cancer | **49 (16.7)** | **112 (6.4)** | **<0.001** | **2.76 (1.92-3.95)** |
| Dementia | **68 (22.2)** | **129 (7.4)** | **<0.001** | **3.66 (2.65-5.06)** |
| Diabetes | **99 (33.6)** | **386 (22.1)** | **<0.001** | **1.75 (1.34-2.27)** |
| Heart disease | **115 (39.1)** | **289 (16.5)** | **<0.001** | **3.15 (2.43-4.10)** |
| Hypertension | **195 (66.1)** | **780 (44.6)** | **<0.001** | **2.40 (1.87-3.10)** |
| Ictus | **36 (12.2)** | **88 (5.0)** | **<0.001** | **2.49 (1.66-3.75)** |
| Immunodeficiency | 10 (3.4) | 29 (1.7) | 0.066 | 1.98 (0.96-4.11) |
| Kidney disease | **59 (20.1)** | **152 (8.7)** | **<0.001** | **2.63 (1.88-3.65)** |
| Lung disease | **59 (20.0)** | **157 (9.0)** | **<0.001** | **2.74 (1.99-3.78)** |
| Liver disease | 14 (4.6) | 73 (4.2) | 0.773 | 1.09 (0.61-1.96) |
| Neuromuscular disorders | **27 (9.2)** | **83 (4.7)** | **<0.005** | **1.92 (1.22-3.02)** |
| Obesity (BMI ≥ 30) | 82 (46.6) | 465 (48.6) | 0.617 | 0.92 (0.67-1.27) |
| Rheumatic disease | **109 (36.9)** | **392 (22.4)** | **<0.001** | **2.55 (1.84-3.54)** |
| **Symptoms at admission** | | | | |
| Abdominal pain | 7 (2.3) | 52 (3.0) | 0.484 | 0.75 (0.39-1.67) |
| Ageusia | **11 (3.6)** | **147 (8.6)** | **<0.004** | **0.40 (0.21-0.75)** |
| Anosmia | **10 (3.3)** | **159 (9.3)** | **<0.001** | **0.33 (0.17-0.64)** |
| Chest pain | **15 (4.9)** | **248 (14.4)** | **<0.001** | **0.31 (0.18-0.52)** |
| Chills | 10 (3.3) | 57 (3.3) | 0.963 | 0.98 (0.50-1.95) |
| Confusion | **26 (8.5)** | **50 (2.9)** | **<0.001** | **3.11 (1.90-5.08)** |
| Coryza | 7 (2.3) | 60 (3.5) | 0.280 | 0.65 (0.29-1.43) |
| Cough | **157 (51.5)** | **1277 (74.0)** | **<0.001** | **0.37 (0.29-0.48)** |
| Diarrhoea | **33 (10.7)** | **334 (19.4)** | **<0.001** | **0.50 (0.34-0.73)** |
| Dizzy | 13 (14.1) | 79 (4.6) | 0.791 | 0.92 (0.51-1.68) |
| Dyspnoea | 203 (66.3) | 1130 (65.4) | 0.758 | 1.04 (0.81-1.35) |
| Fever | **78 (25.4)** | **602 (34.9)** | **<0.001** | **0.63 (0.48-0.84)** |
| Feverish | **185 (60.1)** | **1179 (68.3)** | **0.005** | **0.70 (0.54-0.89)** |
| General deterioration | **116 (37.9)** | **554 (32.2)** | **0.049** | **1.29 (1.00-1.66)** |
| Headache | **20 (6.5)** | **307 (17.8)** | **<0.001** | **0.32 (0.20-0.52)** |
| Malaise | 189 (61.8) | 1059 (61.4) | 0.902 | 1.02 (0.79-1.30) |
| Myalgia | **40 (13.1)** | **441 (25.6)** | **<0.001** | **0.44 (0.31-0.62)** |
| Nausea | 18 (5.9) | 141 (8.2) | 0.169 | 0.70 (0.42-1.16) |
| Sore throat | **6 (2.0)** | **96 (5.6)** | **0.011** | **0.34 (0.15-0.78)** |
| Tachycardia | **152 (49.4)** | **420 (24.3)** | **<0.001** | **3.03 (2.36-3.89)** |
| Vomiting | **9 (2.9)** | **121 (7.0)** | **0.009** | **0.40 (0.20-0.80)** |
| **Clinical measurements** | | | | |
| SBP (mm Hg), mean ± SD | 127.7 ± 24.5 | 129.2 ± 20.5 | 0.273 | 0.99 (0.99-1.00) |
| SBP < 90 mm Hg | **16 (5.5)** | **26 (1.7)** | **<0.001** | **3.44 (1.82-6.50)** |
| DBP (mm Hg), mean ± SD | **70.9 ± 14.8** | **75.1 ± 13.0** | **<0.001** | **0.97 (0.96-0.98)** |
| DBP < 60 mm Hg | **67 (22.9)** | **161 (10.2)** | **<0.001** | **2.60 (1.89-3.57)** |
| Heart rate (bpm), mean ± SD | 89.8 ± 19.8 | 91.2 ± 21.4 | 0.301 | 0.99 (0.99-1.00) |
| Long QT | 10 (8.2) | 40 (6.2) | 0.402 | 1.36 (0.66-2.80) |
| Oxygen saturation (%),mean ± SD | **87.4 ± 8.1** | **93.0 ± 4.8** | **<0.001** | **0.87 (0.85-0.889)** |
| Low oxygen saturation | **223 (87.1)** | **910 (58.1)** | **<0.001** | **4.88 (0.34-7.13)** |
| Respiratory rate (rpm), mean ± SD | 25.3 ± 6.1 | 25.9 ± 29.5 | 0.870 | 0.99 (0.99-1.01) |
| **Biochemical alterations** | | | | |
| Hypoalbuminaemia (albumin < 3.5 g/dl) | **125 (52.7)** | **344 (24.1)** | **<0.001** | **3.52 (2.65-4.67)** |
| ALT > 35 UI/l | **74 (24.5)** | **601 (35.3)** | **<0.001** | **0.60 (0.45-0.79)** |
| AST > 35UI/l | **152 (52.2)** | **765 (46.0)** | **0.050** | **1.28 (1.00-1.65)** |
| Hyperbilirubinaemia >1.2 mg/dl | **25 (8.3)** | **62 (3.7)** | **<0.001** | **2.36 (1.46-3.82)** |
| C-reactive protein > 1 mg/dl | 301 (99.7) | 1682 (98.4) | 0.123 | 4.83 (0.65-35.70) |
| CPK > 145 IU/L | **77 (37.9)** | **289 (23.5)** | **<0.001** | **1.99 (1.46-2.73)** |
| D-dimer (> 500 μg/ml | **233 (81.5)** | **1093 (65.6)** | **<0.001** | **2.30 (1.68-3.15)** |
| Eosinophilia (> 500 eosinophils/μl) | 9 (3.0) | 83 (4.9) | 0.160 | 0.61 (0.30-1.22) |
| Ferritin > 200 ng/ml | 296 (100.0) | 1673 (99.5) | 0.992 | 1.11e+7 (0-Inf) |
| GGT > 38 UI/l | **149 (50.3)** | **977 (58.3)** | **0.011** | **0.73 (0.57-0.93)** |
| LDH > 247 UI/L | **235 (84.2)** | **1226 (76.3)** | **0.004** | **1.66 (1.18-2.33)** |
| Neutrophilopenia (< 1500 neutrophils/μl) | 8 (2.6) | 32 (1.9) | 0.384 | 1.42 (0.65-3.10) |
| Neutrophilia (> 7700 neutrophils /μl) | **109 (35.6)** | **264 (15.3)** | **<0.001** | **3.05 (2.34-3.99)** |
| Thrombocytopenia (< 140 platelets /μl) | **85 (28.0)** | **265 (15.4)** | **<0.001** | **2.13 (1.61-2.83)** |
| Thrombocytophilia (> 370 platelets /μl) | 303 (99.7) | 1716 (99.8) | 0.845 | 1.05 (0.62-1.77) |
| Prothrombin time > 14.3 seconds | **97 (33.2)** | **238 (14.3)** | **<0.001** | **2.99 (2.26-3.96)** |
| Urea in blood > 20 mg/ml | **303 (99.7)** | **1598 (94.0)** | **0.003** | **19.3 (2.69-139)** |
| Data is expressed by absolute (n) and relative (%) frequencies for categorical variables, and by mean (x̅) ± standard deviation (SD) for quantitative variables. Figures in bold point for significant differences (p value ≤ 0.05). Abbreviations: HUVN: Virgen de las Nieves University Hospital, ICU: Intensive Care Unit, SBP: systolic blood pressure, DBP: diastolic blood pressure, ALT: alanine transaminase, AST: aspartate transaminase, CPK: creatinine phosphokinase, GGT: gamma-glutamyl transferase, LDH: lactate dehydrogenase. The reference categoryfor age is 0-40 years. | | | | |

**Table A2**. Factors associated with **ICU admission** in Spanish COVID-19 hospitalised patients (I-MOVE-COVID19 study)

|  | **Admitted to ICU**  179 (8.7%) | **Not admitted to ICU**  1856 (91.3%) | **p value** | **Crude OR (IC95%)** |
| --- | --- | --- | --- | --- |
| **Sociodemographic and clinical factors** | | | | |
| Age, grouped (0-39; 40-64; 65-84; 85+ years) |  |  | **<0.001** | **0.08 (0.04-0.13)** |
| Age 0-39 years | 15 (8.4) | 197 (10.6) |  | (reference) |
| Age 40-64 years | 88 (49.2) | 720 (38.8) | 0.104 | 1.61 (0.91-2.84) |
| Age 65-85 years | 76 (42.5) | 641 (34.6) | 0.132 | 1.56 (0.88-2.77) |
| Age 85+ years | 0 (0.0) | 297 (16.0) | 0.966 | 1.14e-7 (0.00-inf) |
| Sex (men) | **974 (52.5)** | **109 (60.9)** | **0.032** | **1.41 (1.03-1.93)** |
| Centre (HUVN) | **117 (65.4)** | **710 (38.3)** | **<0.001** | **3.05 (2.21-4.20)** |
| Covid-19 vaccinated | **11 (10.7)** | **203 (22.1)** | **0.009** | **0.42 (0.22-0.80)** |
| Flu vaccinated | 70 (8.9) | 716 (39.0) | 0.832 | 1.03 (0.75-1.42) |
| Number of previous hospitalizations (last year), mean ± SD | 4.43 ± 2.51 | 2.36 ± 3.19 | 0.143 | 1.13 (0.96-1.33) |
| Number of previous medical visits (last year), mean ± SD | 7.38 ± 6.55 | 6.66 ± 7.20 | 0.405 | 1.01 (0.98-1.04) |
| Previous medical visits last year >12 | **17 (21.5)** | **70 (13.9)** | **0.078** | **1.7 (0.94-3.07)** |
| **Outcomes** | | | | |
| Mortality | **63 (35.2%)** | **245 (13.2)** | **<0.001** | **3.57 (2.55-4.99)** |
| Need for ventilation | **176 (98.9%)** | **369 (20.4)** | **<0.001** | **344 (84-1393)** |
| **Time between events** | | | | |
| Days from onset to admission, mean ± SD | 7.1 ± 3.4 | 6.5 ± 13.0 | 0.578 | 1.00 (0.99-1.01) |
| Days of stay, mean ± SD | **34.4 ± 24.4** | **10.1 ± 11.2** | **<0.001** | **1.12 (1.10-1.13)** |
| Days of stay > 7 | **171 (98.3)** | **1066 (57.7)** | **<0.001** | **41.71 (13.3-131)** |
| **Underlying conditions** | | | | |
| Number of chronic diseases, mean ± SD | 2.6 ± 1.5 | 2.7 ± 1.9 | 0.535 | 0.96 (0.86-1.08) |
| Anaemia | 16 (9.0) | 223 (12.0) | 0.240 | 0.73 (0.43-1.24) |
| Asthma | 14 (7.9) | 154 (8.3) | 0.855 | 0.95 (0.54-1.68) |
| Body mass index (BMI), mean ± SD | **31.6 ± 5.9** | **29.2 ± 5.6** | **<0.001** | **1.00 (1.00-1.00)** |
| Cancer | 9 (5.1) | 151 (8.1) | 0.153 | 0.60 (0.30-1.21) |
| Dementia | 0 (0.0) | 195 (10.5) | 0.973 | 7.35e-8 (0.00-Inf) |
| Diabetes | **58 (32.6)** | **424 (22.9)** | **0.004** | **1.63 (1.17-2.27)** |
| Heart disease | 31 (17.6) | 367 (19.8) | 0.486 | 0.87 (0.58-1.30) |
| Hypertension | 92 (51.7) | 878 (47.4) | 0.273 | 1.19 (0.87-1.62) |
| Kidney disease | 14 (8.0) | 196 (10.6) | 0.277 | 0.73 (0.41-1.29) |
| Ictus | 9 (5.1) | 115 (6.2) | 0.553 | 0.81 (0.40-1.63) |
| Immunodeficiency | 3 (1.7) | 36 (1.9) | 0.819 | 0.87 (0.27-2.86) |
| Liver disease | 8 (4.5) | 78 (4.2) | 0.844 | 1.08 (0.51-2.27) |
| Lung disease | 23 (12.8) | 192 (10.4) | 0.301 | 1.28 (0.80-2.03) |
| Neuromuscular disorders | 6 (3.4) | 102 (5.5) | 0.236 | 0.60 (0.26-1.39) |
| Obesity (BMI ≥ 30) | **59 (62.1)** | **485 (47.0)** | **0.005** | **1.84 (1.20-2.84)** |
| Rheumatic disease | 34 (19.1) | 462 (24.9) | 0.086 | 0.71 (0.48-1.05) |
| **Symptoms at admission** | | | | |
| Abdominal pain | **10 (5.6)** | **48 (2.6)** | **0.027** | **2.20 (1.10-4.44)** |
| Ageusia | 10 (5.6) | 149 (93.7) | 0.239 | 0.67 (0.35-1.30) |
| Anosmia | 9 (5.1) | 160 (8.7) | 0.096 | 0.56 (0.28-1.11) |
| Chest pain | 21 (8.1) | 239 (13) | 0.649 | 0.90 (0.56-1.44) |
| Chills | 6 (3.4) | 61 (3.3) | 0.965 | 1.02 (0.43-2.39) |
| Confusion | **1 (0.6)** | **75 (4.1)** | **0.046** | **0.13 (0.02-0.96)** |
| Coryza | 2 (3.0) | 65 (3.5) | 0.105 | 0.31 (0.08-1.28) |
| Cough | 127 (71.3) | 1295 (70.4) | 0.795 | 1.05 (0.75-1.47) |
| Diarrhoea | 31 (17.4) | 335 (18.2) | 0.794 | 0.95 (0.63-1.42) |
| Dizzy | 8 (4.5) | 83 (4.5) | 0.987 | 0.99 (0.47-2.09) |
| Dyspnoea | **131 (73.2)** | **1192 (64.7)** | **0.024** | **1.49 (1.05-2.10)** |
| Fever | 61 (34.5) | 615 (33.4) | 0.780 | 1.05 (0.76-1.45) |
| Feverish | 112 (62.6) | 1244 (67.6) | 0.174 | 0.80 (0.58-1.10) |
| Malaise | **92 (52.0)** | **1149 (62.4)** | **0.007** | **0.65 (0.48-0.89)** |
| General deterioration | 55 (30.9) | 613 (33.4) | 0.507 | 0.89 (0.64-1.25) |
| Headache | 30 (16.9) | 295 (16.1) | 0.758 | 1.07 (0.71-1.61) |
| Myalgia | 52 (29.1) | 428 (23.3) | 0.086 | 1.35 (0.96-1.89) |
| Nausea | 18 (10.1) | 139 (7.6) | 0.238 | 1.36 (0.81-2.29) |
| Sore throat | 9 (5.1) | 92 (5.0) | 0.979 | 1.01 (0.50-2.04) |
| Tachycardia | 50 (28.1) | 517 (28.1) | 0.991 | 1.00 (0.71-1.41) |
| Vomiting | 12 (6.7) | 118 (6.4) | 0.868 | 1.05 (0.57-1.95) |
| **Clinical measurements** | | | | |
| SBP (mm Hg), mean ± SD | 126 ± 22.1 | 129 ± 21.0 | 0.067 | 0.99 (0.98-1.00) |
| SBP < 90 mm Hg | **7 (4.5)** | **35 (2.1)** | **0.051** | **2.23 (0.98-5.12)** |
| DBP (mm Hg), mean ± SD | 73.3 ± 13.4 | 74.6 ± 13.4 | 0.270 | 0.99 (0.98-1.01) |
| DBP < 60 mm Hg | 23 (14.7) | 201 (11.8) | 0.287 | 1.29 (0.81-2.05) |
| Heart rate (bpm), mean ± SD | 93.0 ± 33.6 | 90.8 ± 19.7 | 0.228 | 1.00 (1.00-1.01) |
| Long QT | 7 (8.9) | 43 (6.3) | 0.380 | 1.45 (0.63-3.35) |
| Oxygen saturation (%),mean ± SD | **87.6 ± 7.4** | **92.6 ± 5.4** | **<0.001** | **0.90 (0.88-0.92)** |
| Low oxygen saturation | **118 (89.4)** | **1008 (60.1)** | **<0.001** | **5.60 (3.19-9.83)** |
| Respiratory rate (rpm), mean ± SD | 26.4 ± 11.1 | 25.7 ± 29.3 | 0.852 | 1.00 (0.99-1.01) |
| **Biochemical alterations** | | | | |
| Hypoalbuminaemia (albumin < 3.5 g/dl) | 41 (25.5) | 425 (28.4) | 0.425 | 0.86 (0.59-1.25) |
| ALT > 35 UI/l | **73 (41.2)** | **601 (33.1)** | **0.030** | **1.42 (1.03-1.94)** |
| AST > 35UI/l | **104 (59.8)** | **807 (45.7)** | **<0.001** | **1.77 (1.29-2.42)** |
| Hyperbilirubinaemia >1.2 mg/dl | **14 (8.0)** | **73 (4.1)** | **0.019** | **2.04 (1.12-3.69)** |
| C-reactive protein > 1 mg/dl | 175 (100) | 1794 (98.5) | 0.985 | 4.91e+6 (0.00-Inf) |
| CPK > 145 IU/L | **54 (37.8)** | **310 (24.2)** | **<0.001** | **1.90 (1.32-2.73)** |
| D-dimer (> 500 μg/ml | 118 (70.2) | 1200 (67.8) | 0.523 | 1.12 (0.79-1.58) |
| Eosinophilia (> 500 eosinophils/μl) | 162 (92.6) | 1519 (83.5) | 0.068 | 0.34 (0.11-1.08) |
| Ferritin > 200 ng/ml | 174 (100.0) | 1781 (99.6) | 0.991 | 3.84e+6 (0.00-Inf) |
| GGT > 38 UI/l | **121 (69.5)** | **999 (55.9)** | **<0.001** | **1.80 (1.29-2.52)** |
| LDH > 247 UI/L | **162 (94.7)** | **1291 (75.9)** | **<0.001** | **5.73 (2.90-11.31)** |
| Neutrophilopenia (< 1500 neutrophils/μl) | 2 (1.1) | 38 (2.1) | 0.395 | 0.54 (0.13-2.25) |
| Neutrophilia (> 7700 neutrophils /μl) | **53 (29.8)** | **318 (17.3)** | **<0.001** | **2.02 (1.43-2.85)** |
| Thrombocytopenia (< 140 platelets /μl) | 30 (16.9) | 319 (17.4) | 0.879 | 0.97 (0.64-1.46) |
| Thrombocytophilia (> 370 platelets /μl) | 176 (99.4) | 1829 (99.8) | 0.505 | 1.23 (0.66-2.29) |
| Prothrombin time > 14.3 seconds | 25 (14.8) | 306 (17.2) | 0.430 | 0.84 (0.54-1.30) |
| Urea in blood > 20 mg/ml | **175 (98.3)** | **1715 (94.5)** | **0.040** | **3.37 (1.06-10.7)** |
| Data is expressed by absolute and relative (%) frequencies for categorical variables, and by mean (x̅) ± standard deviation (SD) for quantitative variables. Figures in bold point for significant differences (p value ≤ 0.05). Abbreviations: HUVN: Virgen de las Nieves University Hospital, ICU: Intensive Care Unit, SBP: systolic blood pressure, DBP: diastolic blood pressure, ALT: alanine transaminase, AST: aspartate transaminase, CPK: creatinine phosphokinase, GGT: gamma-glutamyl transferase, LDH: lactate dehydrogenase. The reference category for age is 0-40 years. | | | | |

**Table A3**. Factors associated with **ventilation** in Spanish COVID-19 hospitalised patients (I-MOVE-COVID19 study)

|  | **With ventilation**  548 (26.7%) | **Without ventilation**  1456 (73.3%) | **p value** | **Crude OR (IC95%)** |
| --- | --- | --- | --- | --- |
| **Sociodemographic and clinical factors** | | | | |
| Age, grouped (0-39; 40-64; 65-84; 85+ years) |  |  | **<0.001** | **0.25 (0.18-0.35)** |
| Age 0-39 years |  |  |  | (reference) |
| Age 40-64 years | 506 (92.5) | 1291 (88.7) | 0.159 | 1.31 (0.99-1.92) |
| Age 65-85 years | **310 (56.7)** | **690 (47.4)** | **<0.001** | **1.98 (1.36-2.89)** |
| Age 85+ years | 76 (13.9) | 215 (14.8) | 0.109 | 1.42 (0.93-2.19) |
| Sex (men) | **325 (59.3)** | **739 (50.3)** | **<0.001** | **1.41 (1.16-1.73)** |
| Centre (HUVN) | **362 (66.1)** | **427 (29.3)** | **<0.001** | **4.69 (3.80-5.78)** |
| Covid-19 vaccinated | **40 (14.8)** | **175 (23.2)** | **0.004** | **0.57 (0.39-0.83)** |
| Flu vaccinated | **258 (47.6)** | **511 (35.5)** | **<0.001** | **1.65 (1.35-2.02)** |
| Number of previous hospitalizations (last year), mean ± SD | 3.1 ± 2.6 | 2.3 ± 3.4 | 0.282 | 1.08 (0.94-1.25) |
| Number of previous medical visits (last year), mean ± SD | **8.1 ± 8.0** | **6.2 ± 6.6** | **0.003** | **1.04 (1.01-1.06)** |
| Previous medical visits last year > 12 | **45 (22.5)** | **44 (11.4)** | **<0.001** | **2.25 (1.42-3.55)** |
| **Outcomes** | | | | |
| Deaths (%) | **180 (32.8%)** | **126 (8.7%)** | **<0.001** | **5.16 (4.00-6.66)** |
| ICU stay (%) | **176 (32.3%)** | **2 (0.1%)** | **<0.001** | **344 (85-1393)** |
| **Time between events** |  |  |  |  |
| Days from onset to admission, mean ± SD | 6.6 ± 22.6 | 6.6 ± 4.9 | 0.949 | 1.00 (0.99-1.00) |
| Days from onset to admission, mean ± SD | 6.6 ± 22.6 | 6.6 ± 4.9 | 0.949 | 1.00 (0.99-1.00) |
| Days from admission to ICU, mean ± SD | 3.7 ± 2.9 | 1.5 ± 0.7 | 0.292 | 2.45 (0.46-13.00) |
| Days from admission to ICU > 7 | 13 (7.4) | 0 (0.0) | 0.690 | 0.413 (0.02-9.04) |
| Days from onset to ICU, mean ± SD | 9.6 ± 4.1 | 4.5 ± 3.5 | 0.089 | 1.63 (0.93-2.85) |
| Days of ICU stay, mean ± SD | 23.6 ± 19.8 | 23.5 ± 3.5 | 0.996 | 1.00 (0.93-1.07) |
| Days of stay, mean ± SD | **21.6 ± 23.6** | **8.8 ± 6.2** | **<0.001** | **1.15 (1.13-1.17)** |
| Days of stay > 7 | **472 (87.7)** | **747 (51.5)** | **<0.001** | **6.74 (5.11-8.89)** |
| Number of chronic diseases, mean ± SD | 2.8 ± 1.7 | 2.7 ± 1.9 | 0.436 | 1.03 (0.95-1.11) |
| Number of chronic diseases, mean ± SD | 2.8 ± 1.7 | 2.7 ± 1.9 | 0.436 | 1.03 (0.95-1.11) |
| **Underlying conditions** | | | | |
| Anaemia | **40 (7.3)** | **198 (13.6)** | **<0.001** | **0.50 (0.35-0.72)** |
| Asthma | 44 (8.1) | 121 (8.3) | 0.861 | 0.97 (0.68-1.39) |
| Body mass index, mean ± SD | **30.9 ± 5.4** | **29.1 ± 5.8** | **<0.001** | **1.00 (1.00-1.00)** |
| Cancer | **57 (10.5)** | **99 (6.8)** | **0.007** | **1.60 (1.14-2.25)** |
| Dementia | 41 (7.5%) | 144 (9.9%) | 0.106 | 0.74 (0.52-1.07) |
| Diabetes | **164 (30.0)** | **312 (21.4)** | **<0.001** | **1.57 (1.26-1.96)** |
| Heart disease | **125 (22.9)** | **266 (18.3)** | **0.020** | **1.33 (1.05-1.69)** |
| Hypertension | **286 (52.5)** | **667 (45.8)** | **0.008** | **1.30 (1.07-1.59)** |
| Ictus | 39 (7.2) | 81 (5.6) | 0.184 | 1.31 (0.88-1.94) |
| Immunodeficiency | 7 (1.3) | 32 (2.2) | 0.193 | 0.58 (0.25-1.32) |
| Kidney disease | 50 (9.2) | 158 (10.9) | 0.276 | 0.83 (0.59-1.16) |
| Liver disease | 20 (3.7) | 67 (4.6) | 0.362 | 0.79 (0.47-1.31) |
| Lung disease | **78 (14.3)** | **133 (9.1)** | **<0.001** | **1.65 (1.23-2.23)** |
| Neuromuscular disorders | 24 (4.4) | 85 (5.8) | 0.209 | 0.74 (0.47-1.18) |
| Obesity (BMI ≥ 30) | **158 (64.8)** | **384 (43.9)** | **<0.001** | **2.34 (1.75-3.15)** |
| Rheumatic disease | **106 (19.4)** | **394 (27.1)** | **<0.001** | **0.65 (0.51-0.83)** |
| **Symptoms at admission** | | | | |
| Abdominal pain | 15 (2.8) | 42 (2.9) | 0.870 | 0.95 (0.52-1.73) |
| Ageusia | **29 (5.4)** | **127 (8.8)** | **0.012** | **0.59 (0.39-0.89)** |
| Anosmia | **27 (5.0)** | **138 (9.6)** | **0.001** | **0.50 (0.32-0.76)** |
| Chest pain | **56 (10.4)** | **198 (13.7)** | **0.047** | **0.73 (0.53-1.00)** |
| Chills | 17 (3.2) | 48 (3.3) | 0.849 | 0.95 (0.54-1.66) |
| Confusion | 17 (3.1) | 59 (4.1) | 0.332 | 0.76 (0.44-1.32) |
| Coryza | **8 (1.5)** | **59 (4.1)** | **0.006** | **0.35 (0.17-0.74)** |
| Cough | 370 (68.5) | 1032 (71.3) | 0.223 | 0.87 (0.71-1.08) |
| Diarrhoea | **78 (14.4)** | **288 (19.9)** | **0.005** | **0.68 (0.52-0.89)** |
| Dizzy | 22 (4.1) | 68 (4.7) | 0.544 | 0.86 (0.53-1.40) |
| Dyspnoea | **401 (74.0)** | **901 (62.2)** | **<0.001** | **1.73 (1.39-2.15)** |
| Fever | 182 (33.6) | 485 (33.6) | 0.974 | 1.00 (0.81-1.24) |
| Feverish | **345 (63.7)** | **995 (68.8)** | **0.031** | **0.80 (0.65-0.98)** |
| Malaise | **267 (49.6)** | **966 (66.7)** | **<0.001** | **0.49 (0.40-0.60)** |
| General deterioration | 177 (32.7) | 480 (33.2) | 0.825 | 0.98 (0.79-1.21) |
| Headache | 75 (13.9) | 246 (17.0) | 0.094 | 0.79 (0.60-1.04) |
| Myalgia | 139 (25.7) | 330 (22.9) | 0.188 | 1.17 (0.93-1.47) |
| Nausea | 36 (6.7) | 121 (8.4) | 0.203 | 0.78 (0.53-1.15) |
| Sore throat | 20 (3.7) | 80 (5.5) | 0.098 | 0.66 (0.40-1.08) |
| Tachycardia | 168 (30.9) | 394 (27.2) | 0.109 | 1.19 (0.96-1.48) |
| Vomiting | 26 (4.8) | 101 (7.0) | 0.076 | 0.67 (0.43-1.04) |
| **Clinical measurements** | | | | |
| SBP (mm Hg), mean ± SD | **127.2 ± 22.4** | **129.8 ± 20.5** | **0.019** | **0.99 (0.-99-1.00)** |
| SBP < 90 mm Hg | **17 (3.4)** | **23 (1.7)** | **0.028** | **2.01 (1.07-3.80)** |
| DBP (mm Hg), mean ± SD | **72.4 ± 12.8** | **75.2 ± 13.6** | **<0.001** | **0.98 (0.98-0.99)** |
| DBP < 60 mm Hg | 69 (13.9) | 152 (11.5) | 0.153 | 1.25 (0.92-1.70) |
| Heart rate (bpm), mean ± SD | 91.4 ± 24.0 | 91.1 ± 20.2 | 0.803 | 1.00 (1.00-1.01) |
| Long QT | 15 (6.6) | 33 (6.4) | 0.942 | 1.02 (0.54-1.92) |
| Oxygen saturation (%),mean ± SD | **88.8 ± 6.9** | **93.3 ± 4.8** | **<0.001** | **0.87 (0.85-0.89)** |
| Low oxygen saturation | **356 (85.0)** | **757 (55.4)** | **<0.001** | **4.55 (3.41-6.08)** |
| Respiratory rate (rpm), mean ± SD | 25.0 ± 8.0 | 27.1 ± 39.2 | 0.483 | 1.00 (0.99-1.01) |
| **Biochemical alterations** | | | | |
| Hypoalbuminaemia (albumin < 3.5 g/dl) | 136 (27.9) | 318 (28.1) | 0.935 | 0.99 (0.78-1.25) |
| ALT > 35 UI/l | 197 (36.5) | 473 (33.3) | 0.183 | 1.15 (0.94-1.42) |
| AST > 35UI/l | **287 (53.6)** | **621 (45.2)** | **< 0.001** | **1.40 (1.15-1.72)** |
| Hyperbilirubinaemia >1.2 mg/dl | **33 (6.2)** | **51 (3.7)** | **0.017** | **1.73 (1.10-2.71)** |
| C-reactive protein > 1 mg/dl | **539 (99.8)** | **1401 (98.2)** | **0.024** | **10.00 (1.36-73.8)** |
| CPK > 145 IU/L | **155 (34.9)** | **205 (21.6)** | **<0.001** | **1.95 (1.52-2.50)** |
| D-dimer (> 500 μg/ml | **377 (72.2)** | **923 (66.5)** | **0.018** | **1.31 (1.05-1.63)** |
| Eosinophilia (> 500 eosinophils/μl) | 17 (3.2) | 70 (4.9) | 0.095 | 0.63 (0.37-1.08) |
| Ferritin > 200 ng/ml | 536 (100.00) | 1390 (99.5) | 0.990 | 1.17e+7 (0.0-Inf) |
| GGT > 38 UI/l | **333 (63.2)** | **768 (54.8)** | **<0.001** | **1.42 (1.15-1.74)** |
| LDH > 247 UI/L | **461 (90.7)** | **981 (72.8)** | **<0.001** | **3.66 (2.65-5.06)** |
| Neutrophilopenia (< 1500 neutrophils/μl) | 9 (1.7) | 31 (2.2) | 0.374 | 1.12 (0.87-1.45) |
| Neutrophilia (> 7700 neutrophils /μl) | **159 (29.3)** | **207 (14.4)** | **<0.001** | **2.46 (1.95-3.12)** |
| Thrombocytopenia (< 140 platelets /μl) | 101 (18.7) | 244 (17.0) | 0.374 | 1.12 (0.87-1.45) |
| Thrombocytophilia (> 370 platelets /μl) | 539 (99.6) | 1436 (99.9) | 0.309 | 0.38 (0.05-2.67) |
| Prothrombin time > 14.3 seconds | 95 (18.3) | 229 (16.4) | 0.330 | 1.14 (0.88-1.48) |
| Urea in blood > 20 mg/ml | **527 (97.8)** | **1334 (93.6)** | **<0.001** | **3.00 (1.63-5.52)** |
| Data is expressed by absolute and relative (%) frequencies for categorical variables, and by mean (x̅) ± standard deviation (SD) for quantitative variables. Figures in bold point for significant differences (p value ≤ 0.05). Abbreviations: HUVN: Virgen de las Nieves University Hospital, ICU: Intensive Care Unit, SBP: systolic blood pressure, DBP: diastolic blood pressure, ALT: alanine transaminase, AST: aspartate transaminase, CPK: creatinine phosphokinase, GGT: gamma-glutamyl transferase, LDH: lactate dehydrogenase. The reference age category is 0-40 years | | | | |