

Table S1: Characteristics of patients with sickle cell disease receiving extracorporeal life support for severe acute chest syndrome, according to intensive care unit survival.

| Variables | Total (n=22) | Survivors (n=6) | Non-Survivors (n=16) | p |
|--|-------------------|--------------------|-------------------------|--------|
| Age (years) | 27 (21-31) | 25 (21-32) | 27 (21-31) | 0.97 |
| Female | 10 (45.5%) | 6 (100%) | 4 (25%) | <0.01* |
| Phenotype | | | | 0.61 |
| SS | 15 (68.2%) | 5 (83.3%) | 10 (62.5%) | |
| SC | 6 (27.3%) | 1 (16.7%) | 5 (31.3%) | |
| Other | 1 (4.5%) | 0 | 1 (6.3%) | |
| SAPS II | 55 (30-82) | 35 (30-59) | 64 (29-85) | 0.18 |
| Past medical history and chronic treatments | | | | |
| ACS | 13 (59.1%) | 3 (50%) | 10 (62.5%) | 0.66 |
| Allo-immunization | 6 (27.3%) | 1 (16.7%) | 5 (31.3%) | 0.63 |
| Blood exchange program | 3 (13.6%) | 1 (16.7%) | 2 (12.5%) | >0.99 |
| Hydroxycarbamide | 11 (50%) | 4 (66.7%) | 7 (43.8%) | 0.64 |
| Treatments before ECLS | | | | |
| Mechanical Invasive ventilation | 21 (95.5%) | 5 (83.3%) | 16 (100%) | 0.27 |
| Blood transfusion or exchange | 17 (77.3%) | 5 (83.3%) | 12 (75%) | 0.76 |
| Antibiotherapy | 20 (90.9%) | 4 (66.7%) | 16 (100%) | 0.06 |
| Eculizumab | 3 (13.6%) | 0 (0%) | 3 (18.8%) | 0.53 |
| Epoprostenol | 5 (22.7%) | 1 (16.7%) | 4 (25%) | >0.99 |
| Nitric Oxide | 14 (63.6%) | 3 (50%) | 11 (68.8%) | 0.62 |
| Neuromuscular blockers | 18 (81.8%) | 5 (83.3%) | 13 (81.3%) | >0.99 |
| Prone position | 10 (45.5%) | 1 (16.7%) | 9 (56.3%) | 0.16 |
| Biology before ECLS | | | | |
| pH | 7.17 (7.06-7.31) | 7.14 (7.02-7.34) | 7.18 (7.06-7.30) | >0.99 |
| PaO ₂ / FiO ₂ ratio | 61 (51-73) | 65 (53-98) | 61 (50-70) | 0.50 |
| PaCO ₂ (mmHg) | 64 (50-89) | 67 (51-102) | 58 (48-90) | 0.73 |
| Lactacidemia (mmol/L) | 4 (1-12) | 3 (1-6) | 7 (1-13) | 0.39 |
| ProthrombineTime (%) | 43 (25-56) | 52 (33-57) | 37 (19-55) | 0.25 |
| Nadir platelet (G/L) | 106 (55-187) | 151 (45-202) | 92 (57-180) | 0.83 |
| Creatinine (μmol/L) | 115 (87-175) | 104 (87-145) | 121 (78-191) | 0.56 |
| Peak LDH (UI/L) | 1,099 (499-6,374) | 1,285 (912-1,968) | 1,919 (464-6,756) | 0.91 |
| Complications / Organ failure before ECLS | | | | |
| SOFA | 16 (11-18) | 12 (7-16) | 16 (11-18) | 0.10 |
| Time between ACS and ECLS (days) | 2 (1-4) | 3 (1-6) | 2 (1-4) | 0.71 |
| Acute cor pulmonale | 19 (86.4%) | 6 (100%) | 13 (81.3%) | 0.53 |
| Shock | 18 (81.8%) | 4 (66.7%) | 14 (87.5%) | 0.29 |
| Multiorgan failure | 17 (77.3%) | 2 (33.3%) | 15 (93.8%) | <0.01* |
| Vasoactive-inotrope score (μg/kg/min) | 148 (25-313) | 39 (0-138) | 193 (113-355) | 0.04* |
| Left Ventricle Ejection Fraction (%) | 55 (38-60) | 55 (45-60) | 55 (33-60) | 0.70 |
| Cardiac arrest | 9 (40.9%) | 1 (16.7%) | 8 (50%) | 0.33 |
| MV duration (days) | 1 (1-2) | 1 (1-3) | 1 (1-2) | 0.59 |
| ECLS | | | | 0.35 |
| VV | 10 (45.5%) | 4 (66.7%) | 6 (37.5%) | |
| VA | 12 (54.5%) | 2 (33.3%) | 10 (62.5%) | |
| ECLS performed by a mobile team | 10 (45.5%) | 2 (33.3%) | 8 (50%) | 0.65 |
| Biology at day-1 under ECLS | | | | |
| pH | 7.27 (7.11-7.44) | 7.35 (7.25-7.43) | 7.21 (7.10-7.44) | 0.26 |
| PaO ₂ / FiO ₂ ratio | 119 (59-375) | 159 (67-309) | 119 (57-436) | 0.94 |
| PaCO ₂ (mmHg) | 39 (32-47) | 42 (36-47) | 34 (27-47) | 0.35 |

| | | | | |
|----------------------------------|---------------------|---------------------|---------------------|--------|
| Lactacidemia (mmol/L) | 2 (2-15) | 2 (1-4) | 10 (2-20) | 0.04* |
| LDH | 2,910 (1,656-7,718) | 2,210 (1,268-6,671) | 3,800 (1,795-8,067) | 0.22 |
| Complication under ECLS | | | | |
| Hemorrhagic | 9 (40.9%) | 1 (16.7%) | 8 (50%) | 0.33 |
| Ischemic | 4 (18.2%) | 0 (0%) | 4 (25%) | 0.54 |
| Renal Replacement therapy | 10 (45.5%) | 2 (33.3%) | 8 (50%) | 0.65 |
| Total MV duration (days) | 9 (4-13) | 11 (9-13) | 7 (3-11) | 0.15 |
| ECLS duration (days) | 6 (2-8) | 8 (6-14) | 5 (2-8) | 0.07 |
| ICU length of stay (days) | 9 (3-20) | 21 (18-30) | 5 (2-11) | <0.01* |
| RESP-score | -1 (-3-2) | -1 (-6- 5) | -1 (-2-2) | 0.88 |

Values are expressed in median (25-75 centiles) and in percentage for non-continuous variables. SAPS II: Simplified Acute Physiology Score II, ACS: acute chest syndrome, ECLS: extra-corporeal life support, LDH: lactate dehydrogenase, SOFA: Sequential Organ Failure Assessment, Vasoactive-inotrope score: dose of dobutamine (in µg/kg/min) + (dose of norepinephrine + dose of epinephrine) x 100, VV: veno-venous, VA: veno-arterial, MV: mechanical ventilation, ICU: intensive care unit, RESP: Respiratory Extra Corporeal Membrane Oxygenation Survival (ECMO). *Statistically significant.