**Supplementary Table 1. Patient characteristics**

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| Case No. | GA (wk) | Gender | Antenatal steroids (doses) | Weight (g) | 5-min Apgar Score | Age (h) | Surfactant dose No. | Time from the first dose (h) | Ventilation mode | SpO2/FiO2 | Antenatal conditions / Diagnoses |
| 1 | 34.0 | F | 2 | 1660 | 9 | 46.9 | 3 | 46.6\* | NAVA | 231 | IUGR, pre-eclampsia |
| 2 | 33.3 | M | 2 | 1800 | 8 | 45.7 | 2 | 40.9 | NAVA | 370 | PROM, IVH (Gr 1) |
| 3 | 36.9 | F | 2 | 3260 | 4 | 18.7 | 2 | 18.5 | PC | 125 | SVT, fetal hydrops, PPHN |
| 4 | 31.4 | M | 1 | 1250 | 6 | 30.3 | 2 | 29.0 | NAVA | 205 | Chorioamnionitis, IVH (Gr 3) |
| 5 | 34.6 | F | 2 | 1455 | 6 | 4.6 | 2 | 4.2 | PC | 274 | IUGR, pre-eclampsia, infection |
| 6 | 33.4 | F | 1 | 1980 | 8 | 5.8 | 2 | 5.3 | PC | 251 | Chorioamnionitis |
| 7 | 29.4 | M | 2 | 1035 | 7 | 36.7 | 2 | 31.0 | PC | 117 | Twin A, PROM |
| 8 | 28.7 | M | 2 | 1350 | 6 | 59.4 | 2 | 42.6 | NAVA | 408 | Twin A, PROM |
| \*22.6 hours after the 2nd dose GA Gestational age; F female; M male; PC pressure controlled ventilation, NAVA neurally adjusted ventilatory assist; SpO2 peripheral saturation of oxygen; FiO2 fraction of inspired oxygen, IUGR Intra-uterine growth retardation, PROM Premature rupture of membranes, IVH Intraventricular hemorrhage, SVT Supraventricular tachycardia, PPHN Persistent pulmonary hypertension of the newborn |