**Table) Baseline characteristics and outcome for newborns who received bag-mask ventilation without or with PEEP-valve during newborn resuscitation**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **No PEEP** | **PEEP** | **p-value** |
| **n** |  | **n** |  |
| **Baseline characteristics** |  |  |  |  |  |
| Caesarean section, n (%)1 | 191 | 87 (46%) | 183 | 80 (44%) | 0.72 |
| Female sex, n (%)1 | 191 | 87 (46%) | 183 | 72 (39%) | 0.23 |
| Birthweight, kg, median [IQR]2 | 190 | 3.3 [2.9, 3.6] | 183 | 3.2 [2.6, 3.5] | **0.03** |
| Gestational age, weeks, median [IQR]2 | 181 | 38 [37,40] | 168 | 39 [37,40] | 0.72 |
| First recorded HR, beats per minute median [IQR]2 | 190 | 101 [64, 150] | 180 | 97 [66, 151] | 0.79 |
| Time from birth to first ventilation, seconds, median [IQR]2 | 191 | 100 [75,152] | 180 | 97 [66, 151] | 0.20 |
| **Outcomes** |  |  |  |  |  |
| **Circulatory (primary outcome)** |  |  |  |  |  |
| ∆HR in 5 first ventilation sequences\*, bpm/minute, mean (95% CI)3 | 188 | 15 (7, 24) | 176 | 9 (1, 17) | 0.31 |
| ∆HR in first ventilation sequence\* if initial HR <100 bpm, bpm/minute, mean (95% CI)3 | 77 | 48 (26, 69) | 75 | 45 (29, 60) | 0.82 |
| Proportion of newborns with HR≥100 at 2 minutes age, n (%)1 | 152 | 103 (68%) | 132 | 88 (67%) | 0.84 |
| **Clinical outcome** |  |  |  |  |  |
| Total duration of bag-mask ventilation, seconds, median [IQR]2 | 191 | 137 [66, 281] | 183 | 112 [67, 263] | 0.56 |
| 5-min Apgar-score ≤6, n (%)1 | 191 | 41 (21%) | 183 | 32 (17%) | 0.33 |
| Outcome at 24 hours, n (%)1NormalAdmittedDead | 191 | 122 (64%)52 (27%)16 (9%) | 183 | 121 (66%)45 (25%)17 (9%) | 0.84 |
| **Ventilation parameters** |  |  |  |  |  |
| PEEP, mbar, median of median [IQR]2 | 191 | 0.1 (0.1,0.2) | 183 | 4.6 (2.0, 5.6) | **<0.001** |
| PIP, mbar, median [IQR]2 | 191 | 39 (37, 40) | 183 | 39 (37, 41) | 0.55 |
| Expired tidal volume, ml/kg, mean (95% CI) 3 | 190 | 7.4 (6.7, 8.2) | 183 | 5.8 (5.3, 6.5) | **0.003** |
| Mask leak, %, mean (95% CI) 3 | 175 | 44 (41, 46) | 180 | 47 (44, 50) | 0.07 |
| ECO2, %, mean (95% CI) 3 | 191 | 3.7 [3.3, 4.0] | 183 | 3.2 [2.8, 3.6] | 0.07 |

\*A ventilation sequence was defined as >5 seconds continuous ventilation.

**Statistical methods:**

1 Pearsons Chi Square test

2 Wilcoxon rank sum test

3 Mixed model

**Abbreviations:**

∆HR = Change in heart rate

95% CI = 95% Confidence Interval

IQR = Interquartile range