

Table 1. Perinatal characteristics of preterm infants with or without bronchopulmonary dysplasia (BPD)

Variables	BPD (n=194)	No BPD (n=443)	P value
Perinatal characteristics			
GA (wk) ^a	28.2 ± 0.8	29.1 ± 1.7	0.001 ^{**}
BW (g) ^a	1012 ± 93	1052 ± 104	0.001 ^{**}
Male gender ^b	102 (52.6)	228 (51.5)	0.78
Maternal age (y) ^a	26.2 ± 2.4	26.0 ± 3.6	0.47
Twin or multiple births ^b	9 (4.6)	21 (4.7)	0.90
Antenatal steroids ^b	154 (79.4)	366 (82.6)	0.66
PROM ^b	30 (15.5)	74 (16.7)	0.69
Chorioamnionitis ^b	26 (13.4)	35 (7.9)	0.03
Caesarian section ^b	52 (26.8)	112 (25.3)	0.69
Apgar score at 1 min ^a	4.7 ± 0.6	4.9 ± 0.8	0.001 ^{**}
Apgar score at 5 min ^a	6.5 ± 0.7	6.6 ± 0.9	0.17

^aValues are mean±SD

^bNumber (percent)

GA; gestational age, BW; birth weight, PROM; prolonged rupture of membranes >18 hr

^{**}Highly significant

Table 2. Neonatal diseases and co-morbidities in accordance to the presence of BPD

Variables	BPD (n=194)	No BPD (n=443)	P value
RDS ^a	172 (88.6)	388 (87.6)	0.72
Pneumothorax ^a	20 (10.3)	24 (5.4)	0.03 [*]
Pneumonia ^a	31 (15.9)	73 (16.5)	0.87
Sepsis ^a	58 (29.9)	138 (31.2)	0.70
PDA ^a	17 (8.8)	22 (4.9)	0.06
PHN ^a	16 (8.2)	20 (4.5)	0.06
IVH ^a	18 (9.3)	21 (4.7)	0.03 [*]
ROP ^a	9 (4.6)	14 (3.2)	0.38
NEC ^a	24 (12.4)	39 (8.8)	0.16
Frequent blood transfusion ^b	3.2 ± 1.1	2.8 ± 0.9	0.000 ^{**}
Duration of hospitalization ^b	64.3 ± 3.1	46.1 ± 3.8	0.001 ^{**}
Mortality ^a	7 (3.6)	11 (2.5)	0.35

^aNumber (percent)

^bValues are mean±SD

Respiratory distress syndrome; RDS, PDA; patent ductus arteriosus, PHN; pulmonary hypertension, IVH; intraventricular hemorrhage, ROP; retinopathy of prematurity, NEC; necrotizing enterocolitis

^{*}Significant, ^{**}Highly significant

Table 3. Respiratory management characteristics of the study population

Variables	BPD (n=194)	No BPD (n=443)	P value
Surfactant therapy ^a	158 (81.4)	357 (80.6)	0.81
CPAP ^a	82 (42.3)	227 (51.2)	0.04*
Duration of CPAP (d) ^b	5.2 ± 0.8	5.4 ± 1.5	0.08
Mechanical ventilation ^a	148 (76.3)	291 (65.7)	0.008**
Maximum PIP ^b	22.7 ± 1.6	20.1 ± 0.9	0.001**
Duration of mechanical ventilation (d) ^b	19.2 ± 0.9	13.2 ± 1.1	0.001**
Duration of oxygen therapy (d) ^b	45.7 ± 9.2	19.8 ± 1.3	0.001**
Maximum FiO ₂ ^a :			
< 0.60	13 (6.7)	139 (31.4)	
≥ 0.60	181 (93.3)	304 (68.6)	0.0001**
Caffeine ^a	89 (45.9)	244 (55.1)	0.03*

^aNumber (percent)

^bValues are mean±SD

CPAP; continuous positive airway pressure, PIP; peak inspiratory pressure, FiO₂; fraction of inspired oxygen

*Significant, ** Highly significant

Table 4. Demographic and clinical characteristics of preterm survivors according to the severity of BPD

Characteristics	Mild BPD (n=89)	Moderate BPD (n=56)	Severe BPD (n=42)	P 1	P 2	P 3
GA (wk) ^a	28.0 ± 0.1	27.9 ± 1.9	27.4 ± 0.6	0.001**	0.001**	0.001**
BW (g) ^a	954 ± 112	917 ± 125	901 ± 107	0.06	0.50	0.01
Maximum PIP ^a	21.8 ± 1.1	22.1 ± 0.9	22.7 ± 0.7	0.08	0.001**	0.001**
Duration of MV(d) ^a	18.2 ± 0.7	19.1 ± 0.9	19.5 ± 0.6	0.001**	0.01*	0.001**
Duration of oxygen therapy (d) ^a	44.8 ± 5.2	45.1 ± 6.1	45.3 ± 4.9	0.75	0.86	0.60

^aValues are mean±SD

GA; gestational age, BW; birth weight, PIP; peak inspiratory pressure

p 1: between mild and moderate, p 2: between moderate and severe, p 3: between mild and Severe.

*Significant, ** Highly significant

Table 5. Univariate analysis: variables significantly associated with bronchopulmonary dysplasia

Variables	OR (95% CI)	P value
GA	0.81 (0.64-1.15)	0.01 [*]
BW	31.9 (22.9-57.0)	0.01 [*]
Chorioamnionitis	1.8 (1.05-3.09)	0.03 [*]
Apgar score at 1 min	0.31 (0.07-0.32)	0.001 ^{**}
Pneumothorax	2.0 (1.08-3.72)	0.03 [*]
IVH	2.1 (1.06-3.95)	0.03 [*]
CPAP	0.69 (0.49-0.97)	0.04 [*]
Mechanical ventilation	1.68 (1.14-2.46)	0.01 [*]
Maximum PIP	2.3 (2.79-2.4)	0.01 [*]
Duration of mechanical ventilation (d)	5.3 (6.17-5.82)	0.001 ^{**}
Duration of oxygen therapy (d)	30.5 (35.3-33.4)	0.001 ^{**}
Maximum FiO₂ ≥0.60	0.15 (0.08-0.28)	0.001 ^{**}
Caffeine	0.69 (0.49-0.97)	0.03 [*]
Frequent blood transfusion	0.44 (0.40-0.57)	0.001 ^{**}

GA; gestational age, BW; birth weight, IVH; intraventricular hemorrhage, CPAP; continuous positive airway pressure, PIP; peak inspiratory pressure, FiO₂; fraction of inspired oxygen

**Significant, **Highly significant*

Table 6. Multivariate (logistic) regression analysis for predictors of bronchopulmonary dysplasia

Variables	OR (95% CI)	P value
GA	0.62 (0.43-0.98)	0.01 [*]
BW	20.6 (17.1-29.3)	0.04 [*]
Mechanical ventilation	1.07 (0.87-1.54)	0.02 [*]
Maximum PIP	1.48 (1.44-1.91)	0.01 [*]
Duration of mechanical ventilation (d)	3.56 (4.28-3.75)	0.001 ^{**}
Maximum FiO₂ ≥0.60	0.11 (0.05-0.19)	0.001 ^{**}
Frequent blood transfusion	0.64 (0.53-0.87)	0.01 [*]

GA; gestational age, BW; birth weight, PIP; peak inspiratory pressure, FiO₂; fraction of inspired oxygen

**Significant, **Highly significant*