



## Survival of Very-Low-Birth-Weight Neonates in India

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Very-low-birth-weight (VLBW) neonates comprise 4–5% of all live births but constitute the largest proportion of admissions in the neonatal units due to high incidence of morbidities related to premature birth and prolonged hospital stay. Hence, outcome of VLBW neonates is the focus for reporting, auditing, and improvement activities in neonatal units and neonatal networks across the world, especially developed countries. As India makes progress to achieve a “single-digit” neonatal mortality rate (NMR) during this decade, rate of decline of the NMR will become flatter as more difficult to tackle preterm and VLBW mortality accounts for increasing proportion of the neonatal deaths. Hence, it is necessary that efforts are made to record, report, and benchmark VLBW outcomes. Literature reports of VLBW outcome are sparse from India. In this issue of the journal, Gupta et al. report outcome and risk factors of death among VLBW neonates born in a tertiary care hospital of south India. Of 239 VLBW neonates enrolled in the study over one year, 49 (20.5%) died. Risk factors of mortality included

extremely low birth weight, severe intraventricular hemorrhage, hyperglycemia, and respiratory distress syndrome requiring surfactant therapy [1].

Among birth cohorts reported from India, VLBW mortality varies from 14.8% to 40.9% (Table 1) [2–5]. Higher mortality rates have been reported in NICU-admitted cohorts of preterm VLBW neonates [6]. A part of this variation in the mortality can be explained by variation in disease severity, proportion of outborn babies, proportion of extremely low-birth-weight babies, nurse:patient ratio, available infrastructure, and antenatal and intrapartum care. However, despite controlling for these factors, variability in the adoption of evidence-based practices has been known to account for intercenter differences in the VLBW mortality rate [7]. This presents an opportunity to learn from each other and improve. Such collaborative improvement efforts have been proven effective in standardizing the neonatal care in developed countries and establishment of such a collaboration in India is the need of the hour.

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**Table 1** Outcome reports of very-low-birth-weight neonates from India

Study	Gera et al., 2001 [2]	NNPD, 2002–03 [3]	NNPD, 2002–03 [3]	VISHI study, 2015 [4]	Behera et al., 2020 [5]	Gupta et al., 2020 [1]
n	115	5018	1854	1367	114	239
Type	Single center	18 centers	18 centers	11 sites	Single center	Single center
Birth weight (g)	1323 ± 160	NR	NR	1168 ± 240	NR	1191 ± 245
Gestation (wk)	33.8 ± 2.9	NR	NR	30.5 (28–32)	NR	31.4 ± 3
Proportion of ELBW neonates	NR	19.4%	29.6%	NR	NR	20.5%
Proportion of SGA neonates	NR	NR	NR	NR	NR	57.4%
Proportion outborn	0	0	100%	35%	0	0
Mortality	40.9%	29.7%	31.7%	14.8%	25.4%	20.5%
Left against medical advice	–	NR	–	11.4%	0.9%	–
Referred	–	NR	–	NR	–	–
Adverse outcome*	40.9%	29.7%	31.7%	26.2%	26.3%	20.5%
Risk factors	Birth weight, shock, acidosis, mechanical ventilation	NR	–	Chorioamnionitis, inborn, vaginal delivery, lower gestation, and SGA	NR	Birth weight < 1000 g, severe grade of intraventricular hemorrhage, hyperglycemia, and respiratory distress syndrome requiring surfactant therapy

ELBW Extremely low birth weight, NNPD National Neonatal–Perinatal Database, NR Not reported, SGA Small for gestational age

\*Death, LAMA or referral

## Declarations

**Conflict of Interest** None.

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