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Neonatal Outcomes of Preterm/Very Low Birth Weight Infants over a Decade from Queen Mary Hospital, Hong Kong: Comparison with the Vermont Oxford Network

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Introduction

There is paucity of data reporting neonatal outcomes in preterm/very low birth weight (VLBW) local infants. This data is valuable in providing center- and gestational age- (GA) specific information on parental counselling of high risk infants, thereby facilitating decision- making by neonatologists, obstetricians and parents. We also compare the neonatal outcomes with the Vermont Oxford Network (VON) database, aiming to identify key areas for local quality improvement.

Objectives

To evaluate survival rate on discharge and morbidity in preterm/VLBW infants (≤ 29 weeks and/or birth weight < 1500 grams) over a decade at Queen Mary Hospital (QMH), Hong Kong, so as to provide center-specific data for prenatal counseling and to benchmark these results against VON, which comprises of more than 1000 neonatal centers worldwide to provide prospective outcome data for VLBW infants since 1988.

Methodology

Standardized perinatal/neonatal data were prospectively collected for 419 infants of GA 23 to 29 weeks and/or birth weight < 1500 grams that were born at QMH between January 1, 2005, and December 31, 2014. These data were compared with those recorded in the VON in 2013. The chi square test was used to compare the categorical QMH data with that of VON. A two-tailed p value of less than 0.05 was considered to be statistically significant.

Result

Overall survival rate on discharge at QMH was 87%, which was significantly higher than VON (80.5%) (p-value 0.0006). Morbidity free survival at QMH (40%) was comparable with VON. Overall, 86% had respiratory distress syndrome (RDS), 40% bronchopulmonary dysplasia (BPD), 44% patent ductus arteriosus (PDA), 7% severe intraventricular hemorrhage (IVH), 5% necrotizing enterocolitis (NEC), 10% severe

retinopathy of prematurity (ROP), 10% late-onset sepsis and 84% growth failure upon discharge. Rates of RDS, IVH, NEC and severe ROP were similar in the two populations. In QMH, significantly more infants were having BPD, PDA and growth failure than in the VON. Rate of late-onset sepsis was significantly lower than in the VON (p-value 0.0002). At various stages during the study period, quality improvement projects for preterm infant care have been effected, including minimal handling protocol, early extubation policy, use of noninvasive ventilation, targeted oxygen saturation, delayed cord clamping and breastfeeding promotion. Early aggressive nutritional support, nutritional pathway and refinement in targeted oxygen saturation are recently implemented to target for growth enhancement and reducing BPD.