TRADEOFFS BETWEEN MORTALITY AND MORBIDITY FOR VERY PRETERM INFANTS: RESULTS FROM THE EPICE COHORT

Background and aims There is concern that declines in mortality after very preterm birth are accompanied by higher morbidity as more fragile babies survive. We investigated whether rates of severe neonatal morbidity were higher in regions with low versus high mortality.

Methods The EPICE cohort included all births between 22 + 0 and 31 + 6 weeks of gestation in 19 European regions in 2011–2012 (N = 7878 live births). We divided the cohort into tertiles based on regional in-hospital mortality rates excluding deaths due to congenital anomalies: low (<12.0%), medium (12.0 to 14.9%) and high (≥15.0%). Severe neonatal morbidity was defined as intraventricular haemorrhage grades III-IV, cystic periventricular leukomalacia, surgery/peritoneal drainage for necrotizing enterocolitis or retinopathy of prematurity (grades ≥3). Bronchopulmonary dysplasia (BPD) was analysed separately. Multilevel logistic regressions were used to model regional-level effects.

Results 6770 infants were discharged home. 12.2% had at least one severe morbidity (regional range: 3.8% to 24.4%) and 15.3% had BPD (regional range: 6.7% to 34.9%). Rates of severe morbidity were 11.7%, 12.1% and 12.9% in low, medium and high mortality regions, respectively (p = 0.45). BPD was higher in low mortality regions (18.7%, 16.7% and 10.2%, respectively (p < 0.001). The odds ratio for severe morbidity associated with birth in a low versus high mortality region was 0.83 (95% CI: 0.53–1.25) and for BPD was 1.81 (95% CI: 1.08–3.0).

Conclusion Rates of severe neonatal morbidity and BPD vary greatly between regions in Europe. BPD rates were higher in lower mortality regions, but this was not true for other morbidities.

TRENDS IN SNAPPE-II AND CRIB II SCORES OVER A 15-YEAR PERIOD

Background During the last decades mortality of preterm born neonates has declined in the Western world.

Aim We hypothesised that the decrease in mortality in very preterm neonates over a period of 15 years was associated with a decrease in illness severity scores (SNAPPE-II and CRIB II).

Subjects/methods Inborn neonates (January 1997 until December 2011; n = 928) with a gestational age of 26.0–29.9 weeks and without congenital malformations.

SNAPPE-II and CRIB II scores, mortality (<120 days) and morbidity (severe intraventricular haemorrhage (IVH), severe cystic periventricular leukomalacia (cPVL), bronchopulmonary dysplasia (BPD), perforated necrotizing enterocolitis (NEC) and severe retinopathy of prematurity (ROP)) were recorded. Based on important changes in care, subjects were categorised into three periods of year of birth (1: 1997–1999, 2: 2000–2005, and 3: 2006–2011) and outcomes were analysed using multivariable analysis including SNAPPE-II/CRIB II scores, period, gestational age, gender, and their interactions.

Results SNAPPE-II and CRIB II scores were significantly lower for gestational ages between 26.0 and 29.9 in period 3 versus period 1 (p = 0.002; p = 0.018, respectively) in a cubic model analysis. The risks of mortality and serious morbidity were significantly lower for similar SNAPPE-II and CRIB II scores in period 3 versus period 1 (p = 0.010; p = 0.041, respectively). Females had a significantly lower risk of mortality and serious morbidity than males (p = 0.031; p < 0.0001, respectively).