

MULTISYSTEM MORBIDITY IN PRETERM SURVIVORS: ASSOCIATIONS WITH BIRTHWEIGHT-FOR-GESTATIONAL- AGE STATUS FROM BIRTH TO ADOLESCENCE

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Background: Preterm birth is associated with increased long-term morbidity, yet health outcomes are often analysed within separate organ systems. Less is known about how disease burden and co-occurring morbidity patterns differ according to birthweight-for-gestational-age status from birth to adolescence.

Objective: To assess disease burden, International Classification of Diseases, 10th Revision (ICD-10) disease chapter involvement, and morbidity co-occurrence patterns in preterm children according to small-, appropriate-, and large-for-gestational-age (SGA, AGA, and LGA) status.

Subjects and methods: A retrospective longitudinal study included 420 preterm children followed until adolescence (202 boys, 218 girls; born in 2000–2015). First-time diagnoses from medical records (n=1,818) were classified by ICD-10. Children were categorised as SGA, AGA, or LGA. Outcomes were analysed using Poisson and negative binomial regression.

Results: The primary disease burden was concentrated from birth to preschool age. Compared with SGA children, AGA and LGA children had significantly lower incidence rates of separate diseases (IRR 0.825, p=0.004; IRR 0.709, p=0.003) and affected ICD-10 chapters (IRR 0.812, p=0.008; IRR 0.692, p=0.009). Five or more diseases were recorded in 55% of SGA, 39% of AGA, and 25% of LGA children, while five or more ICD-10 disease chapters were affected in 44%, 28%, and 18%, respectively. Differences were significant between SGA and both AGA and LGA groups (p<0.05), but not between AGA and LGA (p=0.365). UpSet analysis showed unique morbidity profiles in 89.1% of SGA, 37.8% of AGA, and 92.9% of LGA children.

Conclusions: SGA status in preterm children was associated with greater long-term disease burden and broader ICD-10 disease chapter involvement. Morbidity profiles were highly heterogeneous, indicating that preterm health outcomes should be evaluated as multisystem and individualised rather than organ-specific outcomes alone.

Keywords: Preterm birth; Birthweight-for-gestational-age; SGA; Long-term morbidity; ICD-10.