

Auxological Dynamics of Cephalic Index in Symmetric and Asymmetric Small for Gestational Age Infants

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Abstract: Cephalic Index (CI) is used to categorize human populations into dolichocephalic (long headed), mesocephalic (medium headed), brachycephalic (broad headed). Due to non-availability of longitudinal information on growth of CI of symmetric and asymmetric small for gestational age (SGA) infants, this study aimed to understand postnatal auxological dynamics of CI amongst these babies of Indian origin. One hundred symmetric (boys: 50, girls: 50), 100 asymmetric (boys: 50, girls: 50) and 100 full-term (boys: 50, girls: 50) appropriate for gestational age (AGA) infants born at full-term to parents representing upper socio-economic strata and inhabiting North-western parts of India were studied. Head length and head width were mixed-longitudinally measured at 1, 3, 6, 9 and 12 months of age using standardized anthropometric techniques and instrument. Cephalic Index was calculated as head width/ head length \times 100. SGA and AGA infants were categorized into Dolichocephalic (CI: male-71.0-75.9; female- 72.0-76.9), Mesocephalic (CI: male-76-80.9; female-77-81.9), Brachycephalic (CI: male-81-85.4; female- 82-86.4) and hyperbrachycephalic (CI: male-85.5-90.4; female- 86.5-91.9). Mean (SD) at each age level were calculated for Cephalic Index amongst symmetric SGA, asymmetric SGA and AGA infants of the two sexes. CI amongst symmetric and asymmetric SGA and AGA male and female infants increased upto 3-6 months of age whereafter, it declined. Symmetric SGA male infants had significantly ($p < 0.01$) lesser mean CI than their asymmetric counterparts. While, female symmetric and asymmetric infants had similar CI values. Symmetric SGA and AGA male infants had brachycephalic form of head while, asymmetric SGA male infants were hyperbrachycephalic. Female SGA and AGA infants remained brachycephalic throughout the entire tenure of this study. Our AGA and SGA infants of the two types representing north-western parts of India had larger mean CI and hence possessed broader heads characterized by larger head width during infancy.

Key words : AGA, Asymmetric SGA, Brachycephaly, Cephalic Index, Dolichocephaly, Indian origin, Symmetric SGA