144 RELATIONSHIP BETWEEN AGE AT MENARCHE AND EARLY-LIFE NUTRITIONAL STATUS IN INDIA

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Age at menarche is associated with anthropometry in adolescence. Recently, there has been growing support for the hypothesis that timing of menarche may be set early in life but modified by changes in body size and composition in childhood. To evaluate this, a cohort of 100 girls aged ≤ 14 years recruited in 2006 were followed up in 2009 in NCR Delhi, India. The analysis was based on nutritional status as assessed by anthropometry and recalled age at menarche. Data were examined using life-table techniques and the Cox regression model. The association between nutritional status indicators and age at menarche was examined in a multivariate model adjusting for potential confounding variables. Censored cases were accounted for. The median age at menarche was 14.7 year. After controlling for early-life predictors (birth size, childhood underweight, childhood stunting) it appeared that adolescent stunting stood out as the most important determinant of age at menarche. Birth size was not a significant predictor of age at menarche. It is concluded that age at menarche is strongly influenced by nutritional status in adolescence, notably the level of stunting, which is in turn highly dependent on the level of stunting in early childhood. A 'late' menarche due to stunting may be detrimental for reproductive health in case of early childbearing because of the association between height and pelvic size.