

Impact of Nutritional Status on the Pubertal Transition in a Sample of Egyptian School Girls

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Abstract : Pubertal growth is influenced by many factors including environmental and nutritional factors. Objective: To assess impact of nutritional status on pubertal staging, ovarian and uterine volumes among school girls. Method: Study was cross sectional and carried out on 1000 healthy school girls, aged 8-18 years selected randomly. They were categorized according to their ages into three groups: 8-12 years, 13-15 years and 16-18 years \pm 6 months, then according to their body mass index percentile to normal weight (≥ 15 - < 85 .), overweight (≥ 85 - < 95) and obese (≥ 95). All girls were subjected for physical, anthropometric (weight, height, body mass index), nutritional markers WAZ (weight/age Z score), HAZ (height/age Z score) and BMI-Z (body mass index Z score), pubertal assessment (Tanner stage) and pelvic transabdominal sonography (uterine and ovarian volumes). Results: Highly significant differences in ovarian and uterine volumes and nutritional markers (WAZ, HAZ and BMI-Z score) were detected among different grades of puberty in the two age groups (8-12 years, 13-15 years) coming in advance of obese girls (with increase of BMI); except HAZ in the second age group. Girls aged 16-18 years reached to final volume for the uterus and ovary with insignificant differences. Pubertal stage, ovarian and uterine sizes were highly significantly correlated with nutritional markers. Mean ages of onset: of puberty, menarche and complete puberty were, 11.65 + 1.84, 14.79 + 1.75 and 15.02 + 1.68 years respectively. Conclusion: Nutritional status has a crucial role in determining pubertal stage, ovarian and uterine volumes among Egyptian girls during the pubertal process.

Keywords : pubertal stage, nutritional markers, girls, ovarian and uterine volumes

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