

PHYSICAL DEVELOPMENT AND REPRODUCTIVE HEALTH OF TEENAGE GIRLS

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ACTUALITY

Close interrelation of gonads function and character of physical development is well known. Peculiar role in the formation of a teenage reproductive system is given to the amount of subcutaneous fat. Deficit as well as excess of body weight in puberty cause deviation from correct course of sexual development period. In literature there are researches confirming direct dependence of menarche age and frequency of menstrual function disorder on a teenage body weight. Excess body weight correlated with acceleration of growth and sexual development, early menarche. However, exactly in this category of teen-age girls progressive increase of frequency of menstrual function disorder was observed.

Deficit of body weight was accompanied by inverse tendencies: insufficient dynamics of secondary sexual characters development and late menarche.

The aim of the present research is to discover peculiarities of physical and sexual development of teen-age girls.

MATERIALS AND METHODS

We studied 38 teen-age girls with disorders of reproductive system (algodismenorrhea, juvenile metrorrhagia, oligo- and amenorrhea. Age of examined teenagers varied from 11 to 17 years. Diagnosis of examined diseased girls was verified by clinical and laboratory and instrumental methods of diagnostics.

For studied individual physical development of teen-age girls somatoscopy, somatometry, physiometry

were applied. On the basis of the results of generally accepted anthropomorphic study with the basic data of height and body weight for the studied girls Index of Muscle Development (IMD) was defined. Control group consisted of 15 basically healthy teen-age girls.

For evaluating sexual development, sequence of occurrence and degree of intensity of secondary sexual characters compared with standards, were taken into account (J.Tanner, 1969; S.Frasier, 1980). Analysis of peculiar properties of sexual development included calculation of general grade of sexual development, which was calculated by formula: $Ma+Pu+Ax+Me$, taking into account intensity of secondary sexual characters and main characteristics of menstrual function.

Values of growth, body weight and indices were processed by means of the method of variation statistics defining average arithmetic value (M), average error of average arithmetic deviation (m), standard deviation (σ), Student's test.

RESULTS AND DISCUSSION

In the course of study it was defined that index of muscle development for girls with reproductive system disorders is 12,2 (in control group 14,5, $p \leq 0,05$).

Comparative analysis of IMD among the examined teenagers showed the following differences: among girls of 11–13 years age IMD is 12,8, whereas among girls of the control group IMD is 14,1. Analysis of IMD among the examined teenagers 13–15 years old and 15–17 years old with pathology of reproductive system is respectively 12,6 and

11,9 comparing with 14,3 and 14,7 of the control group.

Therefore the lowest indices of IMD were found for children of 15–17 years age (11,9, $p < 0,05$). This indicates to change of physical development with chronization of disorders process, including also that of reproductive system. Hence 86,7% ($p < 0,05$) of surveyed children have trophologic syndrome.

Trophologic disorders among teenagers with low IMD are surely accompanied by slowing rates of sexual development and as a results – later ($13,6 \pm 0,1$ years, $p \leq 0,05$). This also proves the role of fat tissue in initiation of sexual development process at the expense of extragonadal synthesis of steroids. It's worth noting that the highest age of menarche ($13,9 \pm 0,4$ years) is registered in teenagers group with obesity ($IMD > 25$). Disappearing of parallelism in this case is most probably explained by pathology syndrome and insulin-resistivity, which often is connected with obesity (table 1).

Table 1. Indices of physical and sexual development of teen-age girls

Indices	Value
Average body weight	$50,2 \pm 0,5^*$
Average height	$160,2 \pm 0,5$
Index of body weight	$12,2 \pm 0,2^*$
Grade of sexual development	$11,2 \pm 0,2$
Average age of menarche	$12,4 \pm 0,1^*$
Share of hypomenstrual syndrome in the structure of menstrual cycle disorder	65%*

* $p \leq 0,05$

Therefore according to data of research trophologic syndrome is spread among teen-age girls. Deepening of functional disorders of reproductive system is expressed in real increase of average age of menarche, higher frequency of sexual development rates delay and increase of hypomenstrual syndrome frequency.

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