

COMPARISON OF THE EXPRESSION OF SEXUAL DEVELOPMENT AND ITS DELAY IN ADOLESCENT GIRLS IN DIFFERENT REGIONS



Bekbaulieva Gulistan Nietbaevna,
Tashkent Medical Academy, Uzbekistan, Tashkent
Ibrahimova Nodira Otabekovna
Tashkent Medical Academy, Uzbekistan, Tashkent

Abstract. *Clinical signs of mental retardation are accompanied by physical development disorders: a decrease in BMI and deviations in the formation of the skeletal system. With an increase in the deficiency of sexual development, the frequency of the nomothetic body type decreases, and disproportions in the development of the chest and bone pelvis increase. In adolescents with mental retardation against the background of signs of sexual infantilism, the following secondary menstrual disorders are detected: secondary amenorrhea - in 22.9%, opsomenorrhea - 43.1%, long-term (more than two years), menstrual cycles are established - 34.0%, of which accompanied by juvenile bleeding - 9.2%. According to the developed prognostic scale of risk factors for mental retardation in girls, the most important are a decrease in BMI, later menarche in the mother or close relatives, and chronic stressful situations. Calculation of an individual risk index makes it possible to predict the likelihood of developing a disease in the prepubertal and early puberty periods and to determine the necessary therapeutic and preventive measures.*

Key words: *delayed sexual development, adolescent girls, ovarian failure.*

Preserving the health of adolescent girls is considered a promising contribution to the reproductive, intellectual, economic and social reserve of society [14,15]. According to the Law of the Republic of Uzbekistan No. 528 dated 11.03.2019. "On the protection of the reproductive health of citizens", today much attention is paid to the health of adolescent girls, since they are the successors of the country's national gene pool [2,3,9,10,17]. Life plans depend on the state of health in adolescence, including professional orientation, the desire for social development, the creation of a family, the birth of full-fledged offspring [6,8,12]. The reproductive health of the younger generation is in the focus of attention of scientists around the world and is one of the priority areas in the Republic of Uzbekistan, where 40% of the population are children and adolescents [1,4,5,7,11,13,16].

The purpose of the study was to compare the severity of sexual development and its delay in adolescent girls from different regions of our Republic.

Materials and research methods. To determine the frequency and prevalence of mental retardation among adolescent girls from different regions of the Republic of Uzbekistan, as well as to determine its role in the structure of sexual development disorders, we examined 85 students of schools and specialized colleges aged 13-18 years in the Khorezm region and Tashkent region.

The main indicators of physical development (height, body weight, chest circumference, pelvic dimensions), the degree of development of secondary sexual characteristics, the size of the uterus and ovaries according to ultrasound data in age dynamics were studied.

Research results. BMI in patients with STRT indicates a smaller weight shield: at 14, 17 and 18 years, this indicator is identical to the BMI of girls with normal sexual development; in the

INTERNATIONAL SCIENTIFIC AND PRACTICE CONFERENCE ON " INTERNATIONAL EXPERIENCE IN INCREASING THE EFFECTIVENESS OF DISTANCE EDUCATION: PROBLEMS AND SOLUTIONS" SPECIAL ISSUE., 27 th July., 2022., France ., Joint Conference IJSSIR

subgroups of 15 and 16 year old girls it was 18.48 ± 0.57 versus 20.01 ± 0.2 and 19.31 ± 0.54 versus 21.55 ± 0.22 $P < 0.05$).

An analysis of the results of the study showed that almost 1/3 of the surveyed adolescents have certain deviations in puberty. Thus, $7.6 \pm 1.6\%$ of the examined girls had signs of mental retardation of the 1st degree (lag in sexual development by 2-2.9 years) in the Khorezm region, and $6.0 \pm 0.9\%$ of the surveyed girls in the Tashkent region. DSD II degree (lag in sexual development by 2.9-4 years) in the Khorezm region was determined in $3.04 \pm 0.5\%$, in the Tashkent region - in $2.2 \pm 0.5\%$ of the examined girls. DSD III degree (lag in sexual development for more than 4 years) in adolescent girls of these regions, respectively, was detected in $2.1 \pm 0.4\%$ and $1.6 \pm 0.4\%$ of cases.

The age of menarche indicates the achievement of a certain degree of puberty of the female body and marks the start of the cyclic activity of the pituitary-ovarian system. The average age of the onset of menstruation in girls determined by us had a significant difference: in the Khorezm region, the average age of menarche was 13.7 ± 0.09 years and in the Tashkent region - 12.8 ± 0.1 years. The average age in the regions as a whole was 13.5 ± 0.07 years.

When studying the dynamics of growth by age groups, natural differences were revealed in the compared groups. The increase in growth in sprouts with normal sexual development at the age of 13 to 16 years was 3.9 cm. the difference in height at the same age was 8.2 cm, with II degree mental retardation - 14.2 cm. cm, in girls with STPS - 5.7 cm. The difference in height between girls with mental retardation and sprouts with normal sexual development at the age of 13-15 years differs by the age of 17-18 years, slightly ahead of those with DSD II st.

The body weight indicator is characterized by its significant decrease in the group of girls with mental retardation of all these forms in all age subgroups: the average weight of girls with normal sexual development at the age of 13 is 45.01 ± 0.58 kg; - 4 ± 0.77 kg, DSD II st. - 36.32 ± 1.27 kg ($P < 0.05$). The difference in body weight of adolescent girls of the studied groups by the age of 18 is less pronounced (DSD II stage - 5 ± 5.68 kg; DSD III stage - 51.44 ± 2.86 kg; DSD - 52.15 ± 3.17 kg), however, it was significantly reduced in relation to the control group (19 ± 0.6 kg, $P < 0.05$).

So, in girls with normal sexual development, the ratio of body types normosthenic: asthenic: infantile: intersex was - 62.9% : 20.4% : 2.8% : 13.9%.

In adolescent girls with DSD I st. this ratio was: 45.35% : 29.4% : 22.7% : 2.5%.

In girls with DSD II Art. - 36.6% : 15.9% : 39.0% : 8.5%.

Patients with DSD III Art. had the following ratio of morphotypes: 32.7% : 18.2% : 43.6% : 5.5%.

Finally, in girls with DSD, the ratio of body types was: 54.2% : 29.2% : 5.1% : 10.4%.

As can be seen from the above data, with an increase in the deficiency of sexual development, the ratio of body types changes towards a decrease in the frequency of normosthenic and a significant increase in the infantile body type (43.6% with DSD III). The maximum percentage of asthenics was found among girls with DSD I st. (29.4%) and patients with DSD ($29.2\% >$). A decrease in the number of girls with an intersex body type in relation to the group with normal sexual development was determined in all the studied groups, and the decrease in the frequency of this morphotype did not depend on the severity of the pathology.

The results of anthropometric studies revealed various deviations in the



2	ISSN2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., July-2022 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2022 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License(CCBY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

indicators of physical development in girls, depending on the degree of mental retardation and the form of the disease. Analysis of the above data allows us to conclude that adolescent girls with signs of mental retardation have a body weight deficit, regardless of the severity of the pathology and age. Growth retardation, observed at the age of 13-16, is leveled by the age of 17 with DSD of II and III degrees. With an increase in the deficiency of sexual development, the frequency of the normosthenic type of physique decreases, a decrease in the circumference of the chest is observed, and the physiological development of the bone pelvis is disturbed. The physical development of girls with DSD is characterized by the least deviations in the formation of the skeletal system.

Score of sexual development in DSD I-III st. represented by the severity of axillary (Ax), pubic (P) hair growth, as well as the degree of development of the mammary glands (Ma). The total score of these indicators in the I degree of mental retardation at the age of 13 to 16 years varies from 1.89 ± 0.04 to 4.67 ± 0.86 , which corresponds to a lag in the sexual development of girls with normal puberty by 2-2.9 of the year. In case of II degree mental retardation at the age of 13 to 18 years, BDP changes from 0.7 ± 0.13 to 5.25 ± 2.03 , which corresponds to a lag in sexual development by 2.9-4 years and with III stage mental retardation. BDP at the age of 14 to 18 increases from 1.32 ± 0.12 to 3.64 ± 0.61 , which indicates a lag in sexual development by more than 4 years.

DSD, in addition to the lag in the development of secondary sexual characteristics, is characterized by the presence of menstrual function, which determines a higher total BPD in adolescent girls of this study group. As can be seen from the figure, at the age of 14, in girls with mental retardation, BDS is 6.11 ± 0.98 , while girls with normal sexual development in this age subgroup have BDS equal to 9.61 ± 0.22 ($P < 0.05$). By the age of 18, the total score for the development of secondary sexual characteristics and menstrual function in girls with mental retardation was 9.16 ± 1.32 , in the control group of 18-year-olds - 11.59 ± 0.09 ($P < 0.05$).

Secondary violations of menstrual function against the background of signs of sexual infantilism are clinical signs of mental retardation. Among the girls examined by us, secondary amenorrhea was detected in 22.9%, opsomenorrhea - 43.1%, long-term unsettled menstrual cycles (more than two years) - 34.0%, of which accompanied by juvenile bleeding - 9.2%.

The results of anthropometry and assessment of sexual development were compared with the data of ultrasound scanning of the uterus and ovaries, which made it possible to identify hypoplasia of the uterus and ovaries of varying severity in 26.4% of those examined with SPMS with normal development of their secondary sexual characteristics.

As it turned out clearly, a decrease in the size of the uterus and ovaries in the examined patients, depending on the degree of mental retardation. The lowest degree of uterine hypoplasia was determined in patients with STRT, however, the difference with similar parameters of girls in the control group was significant in all age subgroups, except for 14-year-old girls ($P < 0.05$). The dynamic increase in the length of the body of the uterus at the age of 14-18 years in these comparison groups was 3.8 and 6.5 mm. The maximum increase in the longitudinal dimensions of the uterus in patients with mental retardation and adolescent girls with normal sexual development was found at the age of 13 to 16 years: with mental retardation I st. - 10.5 mm, with DSD II stage - 13 mm, in the control group - 7.8 mm.

The smallest dimensions of the ovaries were determined in patients with grade III mental retardation, and the age dynamics in this clinical group is also minimal: the increase in the

longitudinal size of the ovary at the age of 14-18 years was 0.96 mm. Adolescents with mental retardation had the closest ovarian sizes to the normative indicators.

However, in this sample, more than half of the patients had small cystic ovarian transformation, which is an indirect indicator of anovulatory menstrual cycles against the background of follicular atresia.

Conclusions. A comparative assessment of the characteristics of the sexual development of girls with mental retardation revealed a deficiency of sexual development of varying degrees, which manifests itself depending on the degree and form of the disease. Ultrasound examination of the pelvic organs is a diagnostic method that allows you to identify signs of sexual infantilism in erased forms of pathology, accompanied by normal severity of secondary sexual characteristics.

Thus, we have established ambiguous rates of puberty and a high frequency of sexual development disorders in adolescent girls and in various regions of the Republic. The most frequently detected pathology in the structure of disorders of sexual development is delayed puberty with a predominance of erased forms of pathology (ZPR I stage), which amounted to 19.5% in the Khorezm region and 13.0% in the Tashkent region.

Literature:

1. Adams H., Hillard P.J. Adolescents menstrual health// *Pediatr. Endocrinol. Rev.* 2006. - Jan., Suppl. 1:138-45. review.
2. Balhtasart J, Cornil CA, Taziaux M et al. // Rapid changes in production and behavioral action of estrogens // *Neuroscience*.2006; 138(3):783-91.
3. Begum M.R., Quadir E., Begum A. et al. Role of aromatase inhibitor in ovulation induction in patients with poor response to clomiphene citrate. // *J Obstet Gynaecol Res.* - 2006. - N 32: 5. - P. 502-506.
4. Butenandt O, Bechtold S, Meidert A. Final Height in patients with constitutional delay of growth and development from tall statures families.// *J Pediatr Endocrinol Metab.* February 2005; 18(2): 165-9.
5. Carpenter S.E. Physiological menstrual disorders: stress, exercise and diet's effect on the menstrual cycle // *Curr. Opin. obstet. Gynecol.* - 1998. - Vol. 6. – P. 536-539
6. Casper R.F., Mitwa/ly M.F. Review: aromatase inhibitors for ovulation • induction. // *J Clin Endocrinol Metab* - 2006. - N 91: 3. - P. 760-771.
7. Corssmit E.P., Wiersinga W.M. Subclinical functional disorders of the thyroid gland.// *Ned Tijdschr Geneesk.* 2003; 47(24): 162-7.
8. De Luca F, Argente J, Cavallo L, et all. Management of puberty in constitutional delay of growth and puberty.// *J Pediatr Endocrinol Metab.*2001 Jul; 14 Suppl 2:953-7.
9. *Pediatric endocrinology.* Edited by Fima Lifshitz. – New York, Basel. – 2003.
10. Den Hond E., Schoeters G. Endocrine disparters and human puberty.// *Int. J. Androl.* February 2006; 29(1):264-71.
11. Falkenstein E., Tillmann H.C, Christ M.. Multiple actions of steroid hormones - a focus on rapid, nongenomic effects // *Pharmacol. Rev.*, 2000. - V. 52; N. 4. - P. 513-56.

INTERNATIONAL SCIENTIFIC AND PRACTICE CONFERENCE ON " INTERNATIONAL EXPERIENCE IN INCREASING THE EFFECTIVENESS OF DISTANCE EDUCATION: PROBLEMS AND SOLUTIONS" SPECIAL ISSUE., 27 th July., 2022., France ., Joint Conference IJSSIR

12. Fancin R, Schonauer LM et al. Serum anti-Midlerian hormone is more strongly related to ovarian follicular status than inhibin B, estradiol, FSH and LH on day 3. // Hum Reproduct - 2003. - 18 (2). – P. 323-7
13. Hamburg R., Insler V. Ovulation induction in perspective. // Hum Reprod Update. - 2002. - N 8. - P. 445-462.
14. Heinrichs C., Bourguignon J.P. Treatment of delayed puberty and hypogonadism in girls. Horm Res 2001; 36(3-4): 147-52.
15. Hoffman B., Bradshaw K.D. Delayed puberty and amenorrhea.// Semin Reprod Med. 2003 Now; 21(4):353-62.
16. Venken K, Schuit F, Van Lommel L. Tsucamoto K. Growth without growth hormone receptor: estradiol is major growth hormone-independent regulator of hepatic IGF-I synthesis.// J Bone Miner Res. Dec 2005; 20(12):2138-
17. Zevenhuijzen H., Kelnar C.J. Diagnostic utility of a low-dose gonadotropin-releasing hormone test in the context of puberty disorders // Horm Res. 2004; 62(4): 168-76.1