"THE FREQUENCY OF OCCURRENCE OF DELAYED PUBERTY AND GROWTH IN ADOLESCENTS IN SURKHANDARYA REGION ACCORDING TO THE RESULTS OF SCREENING"

Alieva Dinara Abralovna*; Yulduz Makhkamovna Urmanova; Safarova Shohsanam Masharipovna***; Mavlonov Utkir Khamidovich******

*Senior Researcher,
Ph.D. Honey. Sciences,
Department Of Neuroendocrinology With Pituitary Surgery,
Republican Specialized Scientific Practical Medical Center Of Endocrinology,
Republic Of Uzbekistan Named After. Academician Y.Kh Turakulova,
UZBEKISTAN

** Professor,
Doctor Of Medicine Sciences,
Department Of Endocrinology With Pediatric Endocrinology,
Tashkent Pediatric Medical Institute, UZBEKISTAN
Email id: Yulduz.Urmanova@Mail.Ru

***Senior Researcher,
Department Of Neuroendocrinology With Pituitary Surgery,
Republican Specialized Scientific And Practical Medical Center Of Endocrinology,
Republic Of Uzbekistan Named After. Academician Y.Kh Turakulova,
UZBEKISTAN

****Head of the Department Of Diabetes,
Bukhara Regional Endocrinological Dispensary,
UZBEKISTAN

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ABSTRACT

Purpose of the study: *To study the incidence of delayed puberty and growth in adolescents in the Surkhandarya region based on the results of screening.*

Material and methods of research: *We examined 500 adolescents aged 10 to 15 years within the framework of the project in the Surkhandarya region.300 boys and 200 girls were examined on the basis of the regional endocrinological dispensary in Termez.*

All patients underwent a general clinical study, which included at the 1st stage:

1) Anthropometric studies with measurement of height (cm), weight (kg)

2) Genitometric studies (the volume of the testicles was determined using a Prader orchidometer), sexual development was assessed in accordance with the tables of the stages of puberty Tanner J. (1980) modified by D.M. Skorodok, and N. Savchenko (1984).

3) Filling out a questionnaire

Research Results. *In total, among 200 adolescent girls, it was revealed: diffuse goiter (DG) 1 stage - 50 b-x (25%), obesity - 10 (5%), growth retardation - 10 b-x (5%), and delayed puberty -*

in 9 (4.5%).Among 300 adolescent boys, the following were identified: diffuse goiter (DG) 1 stage - 56 b-x (19%), obesity - 25 (8.35%), growth retardation - 20 b-x (6.6%), delayed puberty - 7 (2.3%), cryptorchidism -12.(four%).

Conclusions.*1) Out of 500 adolescent boys and girls, delayed puberty was detected in 16 patients (3.2%), and growth retardation - in 30 (6%).), obesity – in 35 (7%). It was found that 1/5 of the examined adolescents suffered from thyroid diseases.*

2) In all age groups, there was a significant decrease in the average growth values (p< 0.05). At the same time, in girls, a significant growth retardation was found in persons with stages 3 and 5 of sexual development according to Tanner. Boys are in stage 4.

KEYWORDS: *Puberty, Growth, Delay, Screening.*

INTRODUCTION

In accordance with ICD-10, delayed sexual development is singled out as an independent endocrine disease. DP (delayed puberty, or somatosexual development) is one of the urgent problems of endocrinology, andrology and sexopathology [1-5].

According to various authors, the frequency of DP ranges from 0.4% to 9.8%, and over the past decades, there has been an increase in it. Such a variation in the frequency of DP is associated with the lack of clear criteria for the age limits of the pubertal period and possible overdiagnosis.[6-10].

Despite the fact that the incidence of delayed puberty among both sexes is the same, but boys are more likely to complain: 9:1.

This cohort of patients has risk factors for infertility in the future. At the same time, risk factors for mental retardation remain unexplored, screening programs for identifying various forms of mental retardation have not been developed, and there is no full-fledged implementation of standards for the diagnosis and treatment of these diseases in regional endocrinological dispensaries. [11-13].

The main feature of adolescence is a deep and painful restructuring of the body - puberty. Sexual development is inseparable from the general and occurs continuously, starting from birth.

However, in adolescence, it accelerates sharply and puberty sets in within a relatively short period of time [14].

To date, there is no doubt that in most cases, damage to the reproductive system, leading to male infertility, occurs in childhood, and often has a congenital character. Among the leading causes of male infertility are such diseases of childhood and adolescence as: cryptorchidism, varicocele, dropsy of the testicles and spermatic cord, hypospadias, etc.

The problem of children's and adolescents' health is relevant and requires constant study of its new aspects [15]. It is especially important to study the health of healthy children and adolescents, which makes it possible to determine the state of pre-illness, to substantiate preventive and prophylactic measures [16, 17].

Thus, sexual development is an integral part of puberty, as a period of physiological and psychological changes that allows you to physically and socially adapt to independent living.

Timely sexual development is the result of accurate integration and harmonious regulation of endocrine structures at all levels: the hypothalamus, adenohypophysis and gonads. Endocrine diseases and obesity are often accompanied by abnormal puberty. Nutrition, physical and emotional stress can have an impact, changing the process of becoming puberty.

Despite the relevance of this area, the prevalence of this pathology still remains poorly understood.

The above was the reason for the present study.

Purpose of the study:to study the incidence of delayed puberty and growth in adolescents in the Surkhandarya region based on the results of screening.

Material and Methods Of Research.. We examined 500 adolescents aged 10 to 15 years within the framework of the project in the Surkhandarya region.300 boys and 200 girls were examined on the basis of the regional endocrinological dispensary in Termez.

All patients underwent a general clinical study, which included at the 1st stage:

4) Anthropometric studies with measurement of height (cm), weight (kg)

5) Genitometric studies (the volume of the testicles was determined using a Prader orchidometer), sexual development was assessed in accordance with the tables of the stages of puberty Tanner J. (1980) modified by D.M. Skorodok, and N. Savchenko (1984) [8].

6) Filling out a questionnaire

At the 2nd stage, a number of additional studies are planned for selected patients, including the study of the endocrine status, general clinical, biochemical, hormonal (STH, IGF-1, LH, FSH, prolactin, TSH, testosterone, cortisol, free thyroxine, etc. - in the laboratory of hormonal studies RSNPMC of Endocrinology of the Ministry of Health of the Republic of Uzbekistan), as well as ultrasound of the genital organs, radiography of the hand, MRI of the pituitary gland, etc.

The obtained data were processed using computer programs Microsoft Excel and STATISTICA_6. Mean values (M) and standard deviations of means (m) were calculated.The significance of differences in the level between groups was assessed by the value of the confidence interval and Student's test (p). Differences were considered statistically significant at $p<0.05$.

Results of the study and their discussion. Table 1 shows the distribution of patients by sex and age.

TABLE 1. DISTRIBUTION OF PATIENTS BY AGE AND BY GROUPS (ACCORDING TO WHO)

Age, years	**boys**	**Girls**	**Total**
Up to 1 year	-	-	-
1 to 4 years	-	-	-
5-10 years	-	-	-
11-14 years old	134	106	240
15-17 years old	166	94	260

18 - 21 years old	-	-	-
Total	**300**	**200**	**500**

As can be seen from Table 1, most of the patients were in their teens.**,**namely from 11 to 15 years.

Table 2 presentsthe frequency of detected diseases in the adolescent girls examined by us.

TABLE 2. THE FREQUENCY OF DETECTED DISEASES DURING EXAMINATION IN GIRLS, N=200

No.	**Disease**	**Total number Patients, abs number**	**% of total**
one	Diffuse goiter 1 tbsp	fifty	25%
2	Obesity	ten	5%
3	growth retardation	ten	5%
four	delayed puberty	9	4.5%
	Total	79	39.5%

As follows from Table 2, a total of 200 adolescent girls were identified: diffuse goiter (DZ) 1 stage - 50 b-x (25%), obesity -10 (5%), growth retardation - 10 b-x (5%), and delayed puberty - in 9 (4.5%).

Table 3 presentsthe frequency of detected diseases in the adolescent boys examined by us.

TABLE 3 THE FREQUENCY OF DETECTED DISEASES DURING THE EXAMINATION IN BOYS, N=300

No.	**Disease**	**Total number Patients, abs number**	**% of total**
one	Diffuse goiter 1 tbsp	56	18.6%
2	Obesity	25	8.3%
3	growth retardation	twenty	6.6%
four	delayed puberty	7	2.3%
5	cryptorchidism	12	four%
	Total	120	42.5%

As follows from Table 3, a total of 300 adolescent boys were identified: diffuse goiter (DZ) 1 stage - 56 b-x (19%), obesity -25 (8.35%), growth retardation - 20 b-x (6.6%), delayed puberty - 7 (2.3%), cryptorchidism -12.(four%).

Thus, out of 500 adolescent boys and girls, delayed puberty was detected in 16 patients (3.2%), and growth retardation - in 30 (6%). %), obesity - in 35 (7%). It was found that 1/5 of the examined adolescents suffered from thyroid diseases.

The study of average anthropometric indicators revealed the following disorders in patients (tables 4 and 5).

TABLE 4 AVERAGE GROWTH DATA FOR 200 ADOLESCENT GIRLS BY AGE (ACCORDING TO J. TANNER'S 5 STAGES OF PUBERTY)

Age, years, by stages of puberty according to Tanner	**Average Height, cm Healthy***	**Average Height, cm patients**	**R**
I prepubertal	136.80 ± 6.24	135.5 ± 3.3	> 0.05
II 11.7 ± 1.3 years	145.74 ± 7.07	142.6 ± 4.5	> 0.05
III 13.2±0.8 years	154.76 ± 7.94	141.52±5.8	< 0.05
IV 14.7 ± 1.1 years	165.32 ± 8.18	162.1 ± 4.2	> 0.05
V 15.5 ± 0.7 years	170.10 ± 7.35	153.6 ± 6.4	< 0.05
Total: n=200			

Note: * here, the average data for normal growth are taken according to I.I. Dedov (3),

P - reliability of differences compared to the norm.

TABLE 5 AVERAGE GROWTH DATA FOR 300 ADOLESCENT BOYS BY AGE (ACCORDING TO J. TANNER'S 5 STAGES OF PUBERTY)

Age, years, by stages of puberty according to Tanner	**Average Height, cm Healthy***	**Average Height, cm patients**	**R**
I prepubertal	136.80 ± 6.24	125.5±3.3	< 0.05
II 11.7 ± 1.3 years	145.74 ± 7.07	134.6 ± 4.5	< 0.05
III 13.2±0.8 years	154.76 ± 7.94	141.52±5.8	< 0.05
IV 14.7 ± 1.1 years	165.32 ± 8.18	149.1 ± 4.2	> 0.05
V 15.5 ± 0.7 years	170.10 ± 7.35	153.6 ± 6.4	< 0.05
Total: n=300			

Note: * here, the average data for normal growth are taken according to I.I. Dedov (3),

P - reliability of differences compared to the norm.

As can be seen from the data in tables 4 and 5, in all age groups there was a significant decrease in the average growth values ($p< 0.05$). At the same time, in girls, a significant growth retardation was found in persons with stages 3 and 5 of sexual development according to Tanner. Boys are in stage 4.

Thus, summarizing the above analysis, it can be noted that such studies should be carried out as both screening and monitoring of adolescents for the purpose of early diagnosis of various anomalies of the reproductive sphere in conditions of iodine deficiency.

CONCLUSIONS:

1) Out of 500 adolescent boys and girls, delayed puberty was detected in 16 patients (3.2%), and growth retardation - in 30 (6%).), obesity – in 35 (7%). It was found that 1/5 of the examined adolescents suffered from thyroid diseases.

2) In all age groups, there was a significant decrease in the average growth values ($p< 0.05$). At the same time, in girls, a significant growth retardation was found in persons with stages 3 and 5 of sexual development according to Tanner. Boys are in stage 4.

BIBLIOGRAPHY

1. Ismailov S.I. Endocrinological aspects of the diagnosis of male infertility: scientific publication / S.I. Ismailov, K.K. Uzbekov, Sh.P. Isamukhamedova, G.A. Froyanchenko, Sh.T. Sultanova // Zhurn. theoretical and clinical medicine. - T., 2006. - No. 4. - C. 95-99.

2. Fridman L. M. Psychology of children and adolescents: // Handbook for teachers and educators. - M.: Publishing House of the Institute of Psychotherapy, 2003.

3. Andreeva E.N., Butrova S.A., Kuchma V.R., Chebotnikova T.V. Epidemiological study of the characteristics of the passage of stages of puberty in children and adolescents living in Moscow //www.t-pacient.ru/archive/n2-2006p/n2-2006p_77.html

4. Shilin D.E. Syndrome of isolated pubarche in girls. // Guide for endocrinologists. M. - 1999. - S. 1-19. ten . Ducharme JR Normal puberty: clinical manifestation and their endocrine

5. Doskin V.A., Keller H., Muraenko N.M., Tonkova–Yampolskaya R.V. Morpho-functional constants of the child's body. M.: Medicine. - 1997. - 287 p.

6. T.A. Romanova. Features of the pubertal period at the present stage//

7. Dedov I.I., Semicheva T.V., Peterkova V.A. Sexual development of children: norm and pathology. M. - 2002. - S. 50-66.

8. Tarusin D.I., Rumyantsev A.G., Gavrilova L.V. and others. Protection of the reproductive health of boys and adolescents. // Information mail. M. -1999. – 49 p.

9. The situation of youth in the Russian Federation:1995.: State Report of the Civil Code of the Russian Federation on Youth Affairs to the Government of the Russian Federation. - M. - 1996. - 159 p.

10. Baranov A.A. Children's health in Russia: scientific and organizational priorities. //Pediatrics. - No. 3. - 1999. - P. 4-6.

11. Gajdos, ZKZ, Hirschhorn, JN and MR Palmert. What controls the timing of puberty? An update on progress from genetic investigation. // Current Opinion in Endocrinology, Diabetes & Obesity. 2009. 16:16-24.

12. Hindmarsh, PC How do Initiate Oestrogen Therapy in a Girl who has not Undergone Puberty? // Current Endocrinology. 2009.71:7-10.

13. Normal Pubertal Development. Lee, PA and Kulin, HE // Pediatric Endocrinology: The Requisites. 2005.pg 63-71.

14. Rosen, D.S. and C. Foster. Delayed Puberty. // Pediatrics in Review. 2001. Vol 22(9): pg 309-315.

15. Kulin, H.E. and J. Muller. The Biological Aspects of Puberty. // Pediatrics in Review. 1996 Vol 17(3)

16. Mirsa, M. and M. M. Lee. Delayed Puberty. // Pediatric Endocrinology. The Requisites. 2005.pg. 87-101

17. Sperling, M. Pediatric Endocrinology. 2008. // Puberty and Its Disorders in the Female. Pg 530-609.

18. Маджидова, Ё. Н., Халимова, Х. М., Раимова, М. М., Матмурадов, Р. Ж., Фахаргалиева, С. Р., & Жмырко, Е. В. (2011). Молекулярно-генетические и некоторые биохимические аспекты болезни Паркинсона. Международный неврологический журнал, (1), 91-94.

19. Раимова, М. М., Бобоев, К. К., Абдуллаева, М. Б., Ёдгарова, У. Г., & Маматова, Ш. А. (2021). СРАВНИТЕЛЬНАЯ ХАРАКТЕРИСТИКА НЕМОТОРНЫХ ПРОЯВЛЕНИЙ БОЛЕЗНИ ПАРКИНСОНА И СОСУДИСТОГО ПАРКИНСОНИЗМА. ЖУРНАЛ НЕВРОЛОГИИ И НЕЙРОХИРУРГИЧЕСКИХ ИССЛЕДОВАНИЙ, (SPECIAL 1).

20. Yodgarova, U., Raimova, M., & Boboyev, K. (2019). Etiopathogenetic factors and clinical picture of restless legs syndrome in persons of Uzbek nationality. Journal of the Neurological Sciences, 405, 236.