

MODERN APPROACHES TO STUDYING THE PROBLEM OF ENURESIS IN CHILDREN AND ADOLESCENTS

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Abstract. *There is a widespread belief that the literature on urinary incontinence is very large, and the problem is thoroughly studied. But this opinion is completely unfounded, there are few serious literary sources, and even fewer scientific ideas that guided the authors [1,2, 5,6].*

Keywords: *enuresis, children, adolescent, primary, pathology, secondary, polyuria, involuntary, urination.*

Urinary incontinence (day and night incontinence) is a serious medical problem. Enuresis in children is one of the most urgent problems in pediatric disciplines. According to current statistics, up to 30% of children aged 4 to 15 years suffer from enuresis. Approximately one in three children with enuresis in early childhood will continue to have urinary incontinence (mainly at night) into adolescence [5,6,18].

Described at the dawn of scientific medicine (Titus Lucretius Carus, I century BC, Avicenna, XI century), urinary incontinence became the subject of thorough scientific research only with the work of Jean-Louis Petit (1674-1750), who sought to approach this disorder in a differentiated way.

George P. L. C., Messerli F. H., Genest J. (1975) analyze in detail all aspects of the history of studying urinary incontinence, asserts that enuresis is "a monopathogenetic but polyethological disease", in which there are no organic forms, that "among patients with nocturnal urinary incontinence there are many oligophrenics and especially neuropaths", that to treat this disease should only be treated by neurologists, pediatricians, and sometimes therapists.

In Russia, one of the founders of the study of urinary incontinence is considered to be Alexander Leontievich Eberman (1830-1902), a urologist, author of several books on urinary incontinence [2, 4,19].

According to various authors, the prevalence of enuresis in five-year-olds is on average 15-20%, then its frequency decreases significantly - on average 7-12%. It is known that about 7% of adolescents and adults suffer from enuresis. According to other authors, the incidence of enuresis in children aged 4-5 years is 20%; 5-8 years-8.5%; 12-15 years-3-3.5%. In boys, enuresis is more common than in girls, in a ratio of 1.5-2:1. Boys suffer from nocturnal enuresis twice as often as girls, according to other data, this ratio is 3: 2. [1,2,6,20].

Urination is a complex physiological process. As the child grows, along with movement skills, control over the mechanisms of urinary excretion and bladder release is acquired. From the age of 1.5 years, most children acquire the ability to feel the filling of the bladder. Control of the cerebral cortex over the nerve centers regulating urination is established between 3 and 5 years of life. In this regard, most cases of urinary dysfunction occur at the age of 3-7 years [6].

As the child grows, 3 factors play a role in the formation of an adult urination pattern (by the age of 2, 5 – 3 years):

- increase in the capacity of the bladder (6 times) with decrease in the frequency of urination;
- gaining control over the muscles and mechanisms of urination;

- the appearance of inhibition of the urethra reflex.

You can only talk about the presence of enuresis in a child when they reach the age of four or five years. Up to this age, urinary incontinence can be considered normaloй.

It is customary to distinguish primary (persistent) nocturnal enuresis (if the patient has never had bladder control) and secondary (acquired if nocturnal urinary incontinence occurs after a period of stable urination control), as well as complicated and uncomplicated (uncomplicated include cases of nocturnal enuresis, in which there are objectively no deviations in somatic and neurological status changes in urinalysis) [1,2, 3,5, 6].

Thus, in patients with primary nocturnal enuresis, the physiological reflex of inhibition of urination ("watchdog") is not initially formed and episodes of "missing" urine persist as the child grows up, and in secondary enuresis, night urination occurs after a long "dry" period (over 6 months). At the same time, it is noted that primary nocturnal enuresis occurs 3-4 times more often than secondary enuresis. In addition, earlier so-called "functional" and "organic" forms of enuresis were often distinguished. In the latter case, it was assumed that there are pathological changes in the spinal cord with developmental defects. Functional forms of enuresis included nocturnal (less often – daytime) urinary incontinence due to the influence of psychogenic factors, educational defects, previous injuries (including mental ones) and infectious diseases (including urinary tract infections) [2,18,19].

In enuresis, the etiology is extremely multifactorial. It cannot be excluded that this pathological condition includes several subtypes, which differ in the following features:: 1) time of onset (from birth or at least after a 6-month period of stable bladder control), 2) symptomatology (only nocturnal enuresis – monosymptomatic or combined urinary incontinence at night and during the day), 3) reaction to desmopressin (good or bad response), 4) nocturnal polyuria (presence or absence). It is suggested that nocturnal enuresis represents a whole group of pathological conditions with different etiology. Nevertheless, it is customary to consider 4 main etiological mechanisms of urinary incontinence: 1) a congenital violation of the mechanisms of formation of the conditioned "watchdog" reflex, 2) a delay in the formation of urination regulation skills, 3) violations of the acquired urination reflex due to the influence of adverse factors, 4) hereditary burden.

Among the causes of nocturnal enuresis, the following can be listed: 1) infections, 2) malformations and dysfunctions of the kidneys, bladder and urinary tract, 3) lesions of the nervous system, 4) psychological stresses, 5) neuroses, 6) mental disorders (less often).

Neurotic urination disorders include not only day and night urinary incontinence of neurotic origin, not only neurotic urinary retention, but also some other neurotic disorders that occur independently, and most often combine with each other. In some cases, this disorder can be considered as a syndrome (neurotic dysuria syndrome) of various types of neuroses, in others it can be a relatively independent disorder isolated from other neurotic disorders. The components of the syndrome of neurotic dysuria and urinary neurosis are diverse, mainly neurotic urinary retention, neurotic urinary incontinence, neurotic polyuria, neurotic nocturia, neurotic pollakiuria. Neurotic pollakiuria is manifested by a sharp increase in urination after a mental trauma, excitement, at the thought of something unpleasant. It occurs most often in women, apparently due to greater emotionality, impressionability and other character traits typical of women. Neurotic pollakiuria is often fixed as a conditioned reflex. Neurotic nocturia - moving the release of the main amount of urine from daytime tonight. In the daytime, there is a normal urinary discharge or

oliguria. Neurotic polyuria is one of the least studied neurotic urination disorders. It is very rare [2,4, 6].

Pathoharacterological reactions as a kind of painful response to life microsocial and psychological troubles are not uncommon in childhood and adolescence. Among the pathoharacterological reactions that occurred with urinary incontinence, active and passive protest reactions are distinguished. In other pathoharacterological reactions, urinary incontinence (and often associated fecal incontinence) is rare [1,3].

Neurosis - like involuntary urination - this type of pathology manifests itself mainly in sleep and therefore such cases can be regarded as enuresis, but always with the addition of the appropriate adjective.

If psychogenic forms of urinary incontinence are socially conditioned and are caused only by psychogenic factors, then neurosis-like urinary incontinence is generated by biological defects: a certain pathological heredity, pathology of pregnancy, childbirth, and the postnatal period [1,6].

Neurosis-like (congenital or acquired) urinary incontinence is a collective concept that includes many heterogeneous phenomena united by the absence of psychogenic origin, progrediency, noticeable experience of one's suffering, and other criteria [1, 5].

Hereditary predisposition to enuresis is observed in more than 75% of children with urinary incontinence. As a rule, a child suffering from urinary incontinence has direct relatives who also suffer, or have suffered from a similar disorder [3,6,7,9,13].

The role of heredity in the origin of various cases of urinary incontinence is different. When it comes to psychogenic forms of urinary incontinence, hereditary features of the patient's constitution (mental and physical) can play a predisposing role [1,8,9,17]. Almost all such patients have relatives who once had violations of urination control. If a hereditary factor is actually the only cause of involuntary urination, then we can talk about hereditary enuresis [1,3,4,20,21].

Primary neurosis-like enuresis most often passes without a trace: patients slowly develop skills for regulating urination during sleep, and this function is gradually compared with the norm. In secondary neurosis-like enuresis, this function is destroyed to one degree or another, already being formed, which is due to a more or less significant lesion of the central nervous system. This is usually due to previous neuroinfectious, traumatic brain injuries, or a cerebral volumetric process [2,8,14].

During examination of the patient (assessment of somatic status) in addition to identifying the above-mentioned disorders on the part of various organs and systems, pay attention to the state of the endocrine glands, abdominal organs, and the urogenital system. An assessment of physical development indicators is mandatory.

When assessing the psychoneurological status of a child, congenital anomalies of the spine and spinal cord, motor and sensory disorders are excluded. The sensitivity in the perineal region and the tone of the anal sphincter must be examined. It is also important to find out the state of the psychoemotional sphere: characterological features (pathological), the presence of bad habits (onychophagia, bruxism, etc.), sleep disorders, various paroxysmal and neurosis-like states. Since urological disorders play a significant role in the occurrence of enuresis (congenital or acquired abnormalities of the genitourinary system: dissynergia of the trusor and sphincter, hyperp- and hyporeflexive bladder syndromes, small bladder capacity, the presence of obstructive changes in the lower urinary tract: strictures, contractures, valves; urinary tract infections, domestic injuries, etc.), first of all, it is necessary to exclude the pathology of the urinary system.

From laboratory tests, important importance is attached to the study of urine (including general analysis, bacteriological, determination of the functional capabilities of the bladder, etc.). It is mandatory to conduct an ultrasound examination of the kidneys and bladder. If necessary, additional studies of the urinary system are performed (cystoscopy, cystourethrography, excretory urography, etc.).

If any abnormalities of the spine or spinal cord are suspected, it is necessary to conduct an X-ray examination (in 2 projections), computer or magnetic resonance imaging (CT or MRI), as well as neuroelectromyography (NEM).

Classification of enuresis. It is customary to distinguish primary (persistent) nocturnal enuresis (if the patient has never had bladder control) and secondary (acquired if nocturnal urinary incontinence appears after a period of stable urination control), as well as complicated and uncomplicated (uncomplicated include cases of nocturnal enuresis, in which there are objectively no deviations in somatic and neurological status as well as changes in urinalysis). Thus, in patients with primary nocturnal enuresis, the physiological reflex of inhibition of urination ("watchdog") is not initially formed and episodes of "missing" urine persist as the child grows up, and in secondary enuresis, night urination occurs after a long "dry" period (over 6 months). At the same time, it is noted that primary nocturnal enuresis occurs 3-4 times more often than secondary enuresis. In addition, earlier so-called "functional" and "organic" forms of enuresis were often distinguished. In the latter case, it was assumed that there are pathological changes in the spinal cord with developmental defects. Functional forms of enuresis included nocturnal (less often – daytime) urinary incontinence due to the influence of psychogenic factors, educational defects, injuries (including mental) and infectious diseases (including urinary tract infections).

Apparently, this classification is somewhat conditional. H. Watanabe (1995), after examining a representative group of patients using EEG and cystometry (y in 1033 children), suggests identifying 3 types of nocturnal enuresis: 1) type I (characterized by an EEG response to bladder distension and a stable cystometrogram), 2) type IIa (characterized by an absence of an EEG response when the bladder is full, a stable cystometrogram), 3) type IIb (characterized by an absence of an EEG response to bladder distension and an unstable cystometrogram only during sleep). This author regards nocturnal enuresis of types I and II as moderate and severe arousal dysfunction, respectively, and nocturnal enuresis of type IIb as latent neurogenic bladder.

If a child has urinary incontinence not only at night, but also during the day, then this may mean that he is experiencing some kind of emotional or neurological problem. As for nocturnal enuresis, it is often noted in children who are exceptionally sound sleepers (the so-called "profundosomnia").

Neurotic enuresis is more common among shy, timid, "downtrodden" children with shallow unstable sleep (such patients are usually very worried about the existing defect). Neurosis-like enuresis (sometimes primary and secondary) is characterized by a relatively indifferent attitude to episodes of enuresis for a long time (until adolescence), and subsequently increased feelings about this [1,2,7,8,9].

The existing classification of enuresis does not fully correspond to modern ideas about this pathological condition. Therefore, J. Noorgard et al. propose to distinguish the concept of "monosymptomatic nocturnal enuresis", which occurs in 85% of patients [9,10,11]. Patients with monosymptomatic nocturnal enuresis are divided into groups with or without nocturnal polyuria,

those who respond or do not respond to desmopressin therapy, and, finally, subgroups with arousal disorders or bladder dysfunctions.

Differential diagnostic criteria for enuresis in children and adolescents. Enuresis—is a diagnosis that is established mainly on the basis of existing complaints, as well as an individual and family history. It is important to remember that relatives of patients with nocturnal enuresis (first degree of kinship) have also had this ailment in the past. Previously, it was found that the presence of episodes of enuresis in the father or mother increases the risk of developing this condition in the child by at least 3 times.

When collecting an anamnesis, first of all, it is necessary to find out the nature of the child's upbringing and the formation of neatness skills. Determine the frequency of episodes of urinary incontinence, the type of enuresis, the nature of urination (weakness of the jet during injection, frequent or rare urges, pain during urination), the presence in the anamnesis of indications of urinary tract infections, as well as encopresis or constipation. Always specify the hereditary burden of enuresis. Attention is paid to the presence of airway obstruction, as well as attacks of nocturnal apnea and epileptic seizures (or non-epileptic paroxysms). Food and drug allergies, urticaria (urticaria), atopic dermatitis, allergic rhinitis and bronchial asthma in children in some cases can contribute to increased excitability of the bladder. When interviewing parents, it is necessary to find out whether relatives have endocrine diseases such as diabetes mellitus or diabetes insipidus, thyroid disorders (and other endocrine glands). Since the vegetative status is closely dependent on the functions of the endocrine glands, any disorders of the endocrine glands can cause enuresis [1,3,6,14,15].

In some cases, urinary incontinence can be induced by the side effects of tranquilizers and anticonvulsants (sonopax, valproic acid preparations, phenytoin, etc.).

Therefore, it is necessary to find out which of these drugs and in what dosage the patient receives (or has received before).

During examination of the patient (assessment of somatic status) in addition to identifying the above-mentioned disorders on the part of various organs and systems, pay attention to the state of the endocrine glands, abdominal organs, and the urogenital system. An assessment of physical development indicators is mandatory.

Neuropsychiatric status. When assessing the psychoneurological status of a child, congenital anomalies of the spine and spinal cord, motor and sensory disorders are excluded. The sensitivity in the perineal region and the tone of the anal sphincter must be examined. It is also important to find out the state of the psychoemotional sphere: characterological features (pathological), the presence of bad habits (onychophagia, bruxism, etc.), sleep disorders, various paroxysmal and neurosis-like states. A thorough defectological examination is performed using the Wexler method or using test computer systems ("Ritmotest", "Mnemotest", "Binatetest") to determine the state of the child's intellectual development and the status of basic cognitive functions.

Laboratory and paraclinical studies. Since энурезаurological disorders play a significant role in the occurrence of enuresis (congenital or acquired abnormalities of the genitourinary system: dissynergia of the trusor and sphincter, hyperp- and hyporeflexive bladder syndromes, small bladder capacity, the presence of obstructive changes in the lower urinary tract: strictures, contractures, valves; urinary tract infections, domestic injuries, etc.), first of all, it is necessary to exclude the pathology of the urinary system. From laboratory tests, important importance is

attached to the study of urine (including general analysis, bacteriological, determination of the functional capabilities of the bladder, etc.). It is mandatory to conduct an ultrasound examination of the kidneys and bladder. If necessary, additional studies of the urinary system are performed (cystoscopy, cystourethrography, excretory urography, etc.) [2,3,4,5,10,14,16].

If any abnormalities of the spine or spinal cord are suspected, it is necessary to conduct an X-ray examination (in 2 projections), computer or magnetic resonance imaging (CT or MRI), as well as neuroelectromyography (NEM).

Differential diagnosis. Urinary incontinence should be differentiated with the following pathological conditions: 1) nocturnal epileptic seizures, 2) some allergic diseases (skin, food and drug allergies, urticaria, etc.), 3) some endocrine diseases (diabetes mellitus and diabetes insipidus, hypothyroidism, hyperthyroidism, etc.), 4) nocturnal apnea and partial airway obstruction, 5) side effects due to taking medication drugs (in particular, thioridazine and valproic acid preparations, etc.) [2,6,21].

Treatment of enuresis in children and adolescents

Although today 100% guarantee of treatment of enuresis, unfortunately, does not provide any of the known methods of treatment, some therapeutic methods are considered highly effective. They can be roughly divided into: 1) medicinal (using various pharmacological preparations), 2) non-medicinal (psychotherapeutic, physiotherapeutic, etc.), 3) regimen [6].

Depending on the underlying cause of this disorder, various medications can be selected for treatment, which belong to the groups of nootropics, adaptogens, and antidepressants.

Recently, a completely new effective remedy for eliminating enuresis has appeared – Adiurethin-DM (desmopressin, minirin), used in the form of nasal drops. As a result of the action of this drug, nighttime urine formation decreases to a volume that can be retained in the bladder until morning awakening. This drug best helps children who have a disturbed daily rhythm of urine formation and accumulate too much of it during the night hours [1,2,18].

It should be borne in mind that the use of any medication, as a rule, is regulated by a certain period (usually from one to two to three months) and at the end of the course of treatment, enuresis may resume. Therefore, the doctor usually prescribes several courses of treatment during the year. In consultation with the doctor, children are advised to give the medicine during travel, trips to the camp, during periods of living together with friends or strangers. It is unacceptable to use vasopressin analogues independently, since nocturnal enuresis in a child may be associated with a completely different pathology, for example, with an infection of the urinary system. And this requires the appointment of antibacterial therapy, after which the phenomena of nocturnal enuresis disappear [1,2,4,20].

The "psychiatric" approach to the treatment of nocturnal enuresis includes prescribing tranquilizers with a hypnotic effect to normalize the depth of sleep (Radedorm, Eunoctin), and if you are resistant to them, it is recommended (usually in neurosis-like forms of enuresis) to take stimulants (Sidnocarb) or thymoleptitic drugs (amitriptyline, milepramine, etc.) before bedtime [5,7]. Amitriptyline (Amizol, Tryptisol, Elivel) is usually prescribed at a dose of 12.5-25 mg 1-3 times a day (available in tablets and tablets of 10 mg, 25 mg, 50 mg). When there is evidence that urinary incontinence is not associated with inflammatory diseases of the genitourinary system, preference is given to imipramine (milepramine), available in the form of tablets of 10 mg and 25 mg. Under 6 years of age, it is not recommended to prescribe the above drug to children for the treatment of enuresis. If prescribed, it is dosed as follows: up to 7 years of age, from 0.01 g

gradually increase to 0.02 g per day, at the age of 8-14 years: 0.03-0.05 g per day. There are therapeutic schemes in which the child receives 25 mg of the drug 1 hour before going to bed, and in the absence of a visible effect, the dose is doubled after 1 month. After reaching "dry" nights, the dose of imipramine is gradually reduced until complete withdrawal [1,2,7,16].

In the treatment of neurotic enuresis resort to the appointment of tranquilizers: 1) hydroxyzine (Atarax) – tablets of 0.01 and 0.025 g, as well as syrup (5 ml contains 0.01 g): for children older than 30 months, 1 mg/kg of body weight/day in 2-3 doses, 2) medazepam (Rudotel) – tablets of 0.01 g and capsules of 0.005 and 0.001 g: a daily dose of 2 mg / kg of body weight (in 2 divided doses), 3) trimetozin (Trioxazine) – tablets of 0.3 g: a daily dose of 0.6 g in 2 divided doses (6-year-olds), 7-12-year-olds-about 1.2 g in 2 divided doses, 4) meprobamate (tablets of 0.2 g) 0.1-0.2 g in 2 doses: in the morning 1/3 of the dose, in the evening-2/3 of the dose (a course lasting about 4 weeks).

Taking into account the fact that immaturity of the child's nervous system, developmental delay, and pronounced manifestations of neuroticism play an important role in the pathogenesis of enuresis, nootropic drugs (kortexin, encephabol, pantogam, pantocalcin, tanakan, and nistenone, gliatilin, etc.) are currently widely used [2,3,4,7,8,18,]. Nootropic drugs are prescribed in courses of 4-8 weeks in combination with other types of therapy in an age-appropriate dosage.

Driptan (oxybutynin hydrochloride) in tablets of 0.005 g (5 mg) can be used in children over 5 years of age in the treatment of nocturnal enuresis caused by 1) unstable bladder function, 2) urination disorders due to neurogenic disorders (hyperreflexia of detrusor), 3) idiopathic detrusor function disorders (motor urinary incontinence). For nocturnal enuresis, the drug is usually prescribed 5 mg 2-3 times a day, starting with a half dose, in order to avoid the development of undesirable side effects (and the last dose is taken immediately before bedtime).

If the cause of enuresis is a violation of the nervous regulation of the bladder, with a predominance of increased tone of its smooth muscles, leading to a decrease in the volume of the bladder, driptan is used. It increases the volume of the bladder and reduces spasms, making spontaneous muscle contractions less frequent, and eliminating urinary incontinence. With a reduced bladder tone, it is recommended to adhere to the regime of forced urination every 2.5 - 3 hours during the day. It is important that the child empties the bladder before going to bed Nivalin, which increases smooth muscle tone, is prescribed as therapy [1,2,19,20]. In addition, courses of vitamin therapy (B6, B12, B1, B2, A, E) are shown.

The complex of treatment of enuresis includes physiotherapy, in the form of effects on the bladder with various currents, ultrasound and thermal procedures (paraffin or ozokerite) that regulate the nervous system. There is also a general strengthening massage and therapeutic gymnastics aimed at strengthening the pelvic floor muscles.

In the treatment of enuresis in children, other methods can also be successfully used, in particular herbal medicine, physiotherapy, reflexology, and psychotherapy. A necessary condition for the success of their application is the high qualification of specialists who conduct treatment [1, 2, 5, 10].

Routine methods of treating enuresis in children and adolescents include the calendar method and the "alarm clock" method.

The calendar method is used for children aged 4-8 who stay dry at least once a week, and can record this in the calendar in the form of an asterisk, sticker, or drawing. Failures are not

marked in the calendar. When the child reaches a pre-agreed number of points, he is entitled to a reward. With a good result, the reward is gradually increased. The percentage of successful results when using the calendar method does not exceed the percentage of spontaneous cures and is 20-35%, and the frequency of relapses is 5%.

The "alarm clock" method can be used for children aged 8 years and older, for whom the above methods did not work, the "alarm clock" method can be tried. When the baby starts urinating in bed, the alarm goes off because the urine (electrolyte solution) in the bed closes the electrical circuit. The idea of this method is for the child to immediately strain the pelvic floor muscles, turn off the alarm clock and go on to urinate in the toilet. After a while, the child should wake up on his own from the feeling of a full bubble. The alarm clock must be provided with clear instructions. If the child remains dry for 14 consecutive nights, you can stop using the alarm clock and resume it if the child relapses. If after 4 weeks there is no improvement, you need to take a break for 6 months. Enuresis in children is cured by this method in approximately 50-90% (on average 70%) of cases with a relapse of 13-69% (on average 40%). The result also depends on the quality of the alarm clock and maintenance.

Psychotherapy. Special psychotherapy is performed by qualified psychotherapists (a psychiatrist or a medical psychologist) and is aimed at correcting general neurotic disorders. For children who have reached the age of 10, the use of suggestion and autosuggestion (before going to bed) is applicable the so-called "formulas" of self-awakening when the urge to urinate. Every night before going to bed, the child tries for several minutes to mentally imagine the feeling of fullness of the bladder and the sequence of their own further actions. Immediately before falling asleep, the patient should repeat the "formula" several times for the purpose of autosuggestion: "I want to always wake up in a dry bed. While I sleep, my urine is trapped in my body. When I want to urinate, I'll quickly get up on my own."

So-called "family" psychotherapy is also important. Parents can successfully apply the child's reward system for "dry" nights. To do this, the child himself must systematically keep a special ("urinary") diary, which is filled in daily (for example, "dry" nights are indicated by "sun", and "wet" - "clouds"). At the same time, the child needs to explain that if the nights are "dry" for 5-10 consecutive days, a prize awaits him.

After episodes of urinary incontinence, it is necessary to change bed linen and underwear (it will be better if the child does this independently).

It should be particularly noted that the positive effect of these psychotherapeutic measures can be expected only in children with preserved intelligence.

Diet therapy. In general, the diet significantly restricts fluid intake. Of the special diets for nocturnal enuresis, the most commonly used is the N. I. Krasnogorsky diet, which increases the osmotic pressure of the blood and promotes water retention in the tissues, which reduces urination.

Prevention. Measures to prevent nocturnal enuresis in children are reduced to the following main actions:

Timely refusal to use any diapers (standard reusable and disposable).

Usually, diapers are completely stopped using when a child reaches the age of two, teaching children to basic neatness skills.

Control over the amount of liquid consumed during the day (taking into account the air temperature and time of year).

Sanitary and hygienic education of children (including training in compliance with the rules of hygienic care of external genitalia).

When a child suffering from enuresis reaches the age of 6, further "wait-and-see" tactics (with the refusal of any therapeutic measures) cannot be considered justified. Six-year-olds with nocturnal enuresis should receive adequate treatment. [3,5,7,10,12,19].

Conclusions: When examining children with urinary incontinence, it is always advisable to start a diagnostic search by confirming or excluding the pathology of the urinary system: congenital malformations, inflammatory diseases, neurogenic bladder dysfunction. The algorithm of examination of children with urinary incontinence should include urological and neuropsychiatric methods of examination, as well as an assessment of the somatic status of patients.

The most important factor determining the development of enuresis is the ratio between the functional capacity of the bladder and nocturnal urine production. If the latter exceeds the capacity of the bladder, then nocturnal enuresis appears. It is possible that some of the symptoms considered abnormal in children with nocturnal enuresis are not, since episodes of urinary incontinence are periodically observed in healthy children.

REFERENCES

Monographs:

1. Alyaev Yu. G., Disorders of urination // Moscow: "Litterra", 2006. p. 208.
2. Al-Shukri S. Kh., Kuzmin I. V. Hyperactivity of the trusor and urgent urinary incontinence. Staff for doctors-St. Petersburg, 2001,p. 41.
3. Balaeva, I. V. Kazanskaya, V. M. Studenikin., Algorithm of treatment of primary nocturnal enuresis: a manual for doctors, L. S.-Moscow: Mezhdunarodnyi fond, 2000, P165.
4. Kirova, S. M., Index of domestic and foreign literature on nocturnal urinary incontinence, Trudy Voenno-meditsinskoy akademii im., L., 1999, vol. 95, pp.219-244
5. Korovina N. A., Gavryushova A. P., Zakharova I. N. Protocol of diagnosis and treatment of enuresis in children. Moscow, 2000.C. 2, pp. 2-4 ..
6. Lebedev B. V., Freidkov V. I., Shanko G. G. et al. Handbook of Pediatric Neurology. Edited by B. V. Lebedev, Moscow, Meditsina Publ., 1995.C, pp. 362-364.
7. Studenikina M. Ya., Adiurethin in the treatment of nocturnal enuresis in children. Edited by M. Ya. 2000.P. 210.
8. Tsirkin S. Yu. (ed.). Handbook of Child and Adolescent Psychology and Psychiatry. St. Petersburg. Peter. 1999.P. 150. Articles from magazines and collections:
9. Vishnevsky V. G., Diagnosis and treatment of bladder dysfunction in young children// Children's Surgery Magazine. 2002. No. 3. P. 48-54.
10. Zavadenko N. N., Petrukhin A. S., Pylaeva O. A. Enuresis in children: classification, pathogenesis, diagnosis, treatment. // Bulletin of Practical Neurology, 1998, no. 4.C, pp. 133-137.
11. Mikheeva I. G., Nikolaeva V. V., Kuznetsova N. I., Kolbe O. B., Moiseev A. B., Labutina N. V., Petrosova S. A., Badyaeva S. A. Clinical and psychological features of children with neurogenic bladder dysfunctions // Sovremennye tekhnologii v pediatrii i detskoj khirurgii: Materialy V Vserossiyskogo kongressa [Modern technologies in pediatrics and pediatric surgery: Materials of the V All-Russian Congress].C.195.

12. Nikolaev S. N., Efremenko A.D., Vatolin K. V., Sottaeva Z. Z., Akhmetzhanov I.S., "Treatment of urinary incontinence in children with developmental defects of the caudal spine and spinal cord" // Neurological Bulletin. V. M. Bekhterev Journal, proceedings of the IV Regional Scientific and Practical Conference " Pediatrics and Pediatric Surgery in the Volga Federal District "(appendix to the journal). Kazan, 2007. p. 142.
 13. StudenikinPeterkova V. A., Fofanova O. V. et al. Efficacy of desmopressin in the treatment of children with primary nocturnal enuresis. Pediatrics, 1997, No. 4.C., pp. 140-143.
 14. Rittig S., Matthiesen T.B., Hunsdale J.M., Pedersen E.B. et al. Agerelated changes in the circadian control of urine output. Scand. // J. Urol. Nephrol., 1995, suppl., vol. 173. p. 71–76.
 15. Rushton H.G. Nocturnal enuresis: epidemiology, evaluation and currently available treatment options // J Pediatrics, 1989, vol. 114, suppl., p. 691–696.
 16. Schaffer D. Enuresis. In: «Child and adolescent psychiatry: modern approaches» (Rutter M., Hershov L., Taylor E., eds.). 1994, Oxford: Blackwell Science, 1994. p. 465–481.
 17. Watanabe H. Sleep patterns in children with nocturnal enuresis. Scand. // J. Urol. Nephrol., 1995. vol. 173 p. 55–57.
 18. Маджидова Я.Н., Закирова Д.А., Азимова Н.М. ОСОБЕННОСТИ ФАКТОРОВ РИСКА РАЗВИТИЯ КОГНИТИВНЫХ НАРУШЕНИЙ У ДЕТЕЙ, ПЕРЕНЕСШИХ ОБЩУЮ АНЕСТЕЗИЮ // " ENGLAND" MODERN PSYCHOLOGY AND PEDAGOGY: PROBLEMS AND SOLUTION. – 2023. – Т. 10. – №. 1.
 19. Маджидова Я.Н., Эргашева Н.Н. Нейротрофические поражения нижних конечностей при спинальной патологии у детей //Журнал теоретической и клинической медицины. – 2017. – №. 2. – С. 90-92.
 20. Маджидова Я.Н., Кизи М. Ш.Б. Новые возможности раннего выявления аутизма. Разработка скрининговых методов диагностики //Медицина: теория и практика. – 2019. – Т. 4. – №. 5. – С. 328-329.
- Internet sites
21. http://vrachplus.narod2.ru/moi_knigi/vse_taini_enureza/klassifikatsiya_vidi_enureza/