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Do children with autism require special otorhinolaryngological care?

Czy dzieci z autyzmem wymagają specjalnej opieki otorynolaryngologicznej?

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Abstract

Early childhood autism is a serious overall developmental disorder, the typical features of which are problems with communication with the environment and social bonds. The aetiology of autism is probably multifactorial and has not been fully understood. The characteristics of an autistic child make its caretakers seek help from various specialists, and the diagnosis of the disorder often comes very late. The prognosis for curing is bad. The treatment of childhood autism should be of a multidirectional character and consider the needs of the child and its family. First, behavioural therapy, sensory integration therapy, speech therapy and pharmacological symptomatic treatment as well as treatment of coexisting ailments, including otorhinolaryngological diseases, are introduced. Hearing impairment in children with developmental disorders may cause even greater difficulties in contact with the environment, which is of fundamental importance for the child's development, its rehabilitation and psychiatric/psychological treatment. Autism may coexist with sensorineural hearing loss. Some authors suggest that in such cases, the most common is profound sensorineural hearing loss. The problem of hearing loss in children with autism concerns not only the sensorineural hearing loss, but also the conductive hearing loss, which is characteristic to preschool and school age. In a child with overall developmental disorders, both hearing loss and other laryngological symptoms may remain unnoticed by parents. Laryngological care for an autistic child seems insufficient. It is necessary to create a systematic laryngological control and conditions for periodic hearing tests in this group of children.

Keywords: autism, children, otolaryngology

Streszczenie

Autyzm wczesnodziecięcy jest poważnym całościowym zaburzeniem rozwoju, do którego typowych cech należą problemy z komunikacją z otoczeniem i związkami społecznymi. Etiologia autyzmu jest najpewniej wieloczynnikowa i nie została do końca poznana. Cechy dziecka autystycznego powodują, że jego opiekunowie szukają pomocy u różnych specjalistów, a rozpoznanie zaburzenia następuje często bardzo późno. Rokowanie co do wyleczenia jest złe. Leczenie autyzmu dziecięcego powinno mieć charakter wielokierunkowy, uwzględniający potrzeby dziecka i jego rodziny. Stosuje się przede wszystkim terapię behawioralną, terapię integracji sensorycznej, terapię logopedyczną i farmakologiczne leczenie objawowe oraz terapię dolegliwości współistniejących, w tym otorynolaryngologicznych. Upośledzenie słuchu u dzieci z zaburzeniami rozwoju może powodować jeszcze większe trudności w zakresie kontaktu z otoczeniem, mając zasadnicze znaczenie dla rozwoju dziecka oraz jego rehabilitacji i leczenia psychiatrycznego/psychologicznego. Z autyzmem może współistnieć niedosłuch odbiorczy. Niektórzy autorzy sugerują, że w takich przypadkach najczęściej występuje niedosłuch odbiorczy w stopniu głębokim. Problem niedosłuchu u dzieci z autyzmem dotyczy nie tylko niedosłuchu odbiorczego, ale także przewodzeniowego – charakterystycznego dla wieku przedszkolnego i szkolnego. U dziecka z całościowymi zaburzeniami rozwoju zarówno niedosłuch, jak i inne dolegliwości laryngologiczne mogą pozostawać niezauważone przez rodziców. Opieka laryngologiczna nad dzieckiem autystycznym wydaje się niewystarczająca. Konieczne jest stworzenie systemowej kontroli laryngologicznej i warunków okresowych badań słuchu w tej grupie dzieci.

Słowa kluczowe: autyzm, dzieci, otorynolaryngologia

Early childhood autism is a serious overall developmental disorder, the typical features of which are problems with communication with the environment and social relationships as well as difficulties with the integration of sensory impressions. What is characteristic to children with autism, is the avoidance of social interactions and indifference towards people, including people from the closest environment of the child, and stimuli that trigger the desire to maintain emotional and verbal contact. The prevalence rate for paediatric autism is 50/100,000; the disorder is more likely to affect boys than girls (4:1 ratio)[1]. The aetiology of autism is probably multifactorial and has not been fully understood. The importance previously attributed to psychosocial factors in this area is currently attributed to central nervous system dysfunction, excessive sensitivity to stimuli and difficulties in their integration. However, no specific changes in the central nervous system have been identified, and biological factors may interact with psychological factors. Their proportional share may be different in each case of recognised childhood autism.

The diagnostic criteria for early childhood autism were approved by the World Health Organization (WHO) in 1992[2]. This disorder begins to develop before the age of 3 years, and disruptions in speech development are the cause of significant cognitive limitations and the resulting difficulties in achieving school readiness. Autism is also characterised by hypersensitivity to sensory stimuli, psychomotor hyperactivity or excessive sedation, impaired motor coordination despite normal motor skills, aggression and – particularly frequent – autoaggression, disturbances of polysensory integration and sleep disorders. The prognosis for curing is bad. The treatment of childhood autism should be of a multidirectional character and consider the needs of the child and its family. First, behavioural therapy aimed at improving behaviour, sensory integration therapy, speech therapy and pharmacological symptomatic treatment are introduced[3].

Hearing disorders are an extremely important problem in the group of children with a total developmental disorder, which is autism. Good hearing and the development and consolidation of normal speech are not only an indispensable component of development for these children, but also serve as a tool for rehabilitation[4]. The features of an autistic child cause make its caretakers seek help from various specialists, and the diagnosis of the disorder often comes very late[5]. In the era of widespread use of the hearing loss detection program in newborns with the OAE objective test (otoacoustic emission), deafness is detected up to 6 months of age and supplied with hearing aids or cochlear implants until the end of the first year. Early recognition of deafness or its exclusion, which often gives rise to suspicion of autism, is of great importance for early apparation or psychotherapy and psychiatric treatment[6]. It can therefore be concluded that the hearing loss detection program has also significantly contributed to the early detection of mental disorders in children, including autistic disorders[7]. Audiologic evaluation in infancy causes numerous problems, as the ABR (auditory brainstem response) test in the autistic group is difficult to assess due to the numerous artefacts that hinder its description[8]. Autism may also coexist with receiving hearing loss. Some authors suggest that in such cases, the most common is profound sensorineural hearing loss[9]. Numerous researchers also pay attention to significant difficulties in the development of speech in deaf children supplied with cochlear implants who have been diagnosed with autism[10–12].

In the school and preschool period, conductive and mixed hearing loss are often a problem, which often goes unnoticed even in healthy children. In the group of children with emotional and psychiatric/psychological problems, the hearing loss may be masked by the behaviour of the child and may remain unnoticed[13]. Hearing impairment in children with developmental disorders is of particular importance, as it may cause even greater disturbances of contact with the environment and have a fundamental impact on the child's development and its rehabilitation as well as on psychiatric and psychological treatment. Another problem, often reported by caregivers of children with autism, is hyperacusis, which often coexists with a significant delay in intellectual development[14].

Subjective hearing tests, such as the acoustic examination (a whisper test), examination with tuning forks, the threshold tone audiometry and the supra-threshold studies in autistic children are extremely difficult to perform, which is caused by the difficulties in contact with a sick child. Objective studies, which include OAE and impedance audiometry, are an invaluable tool in the diagnosis of children's hearing. This is particularly important in the group of non-cooperating children, which undoubtedly include children with autism. Therefore, the methods of objective hearing tests seem to be the best for assessing hearing loss in the population of school and preschool children with mental problems. Bilateral hearing loss and deafness disturb not only the psychomotor development of a small person. Binaural hearing is important for the location of the sound source and hearing in noise[15].

OAE is a widely used screening test in the diagnosis of both sensorineural and conductive hearing loss, especially in infants and young children[16]. The absence of otoacoustic emission for low tones is considered typical for conductive hearing loss in the course of chronic otitis media with effusion[17,18]. Impedance audiometry is the most commonly used objective examination which allows to assess the function of the middle ear. It is a recognised screening test in the diagnosis of middle ear pathology, causing conductive hearing loss, often occurring in preschool and school children[19]. The assessment of the appearance of the tympanometric curve, pressure values in the middle ear during the change of pressure in the external auditory canal and the presence of ipsilateral reflexes from the stapedial muscle allow to observe serious disturbances of the middle ear ventilation. It is generally believed that the presence of the tympanometric curve B and C2, the lack of ipsilateral reflexes from the stapedial muscle and the low pressure in the

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middle ear in the description of the tympanometric study are most frequently observed in chronic otitis media with effusion. Studies involving a large group of autistic children confirm a higher incidence of impedance audiometry (and tympanometry in particular) in this population than among healthy children[20].

Conductive hearing loss in the group of preschool and early-school children is most often caused by central ear dysfunction caused by impaired ventilation of the tympanic cavity. An early diagnosis of the hearing tube dysfunction and its consequences, such as chronic otitis media with effusion and chronic atelectatic otitis media, are of great importance for suppressing the progression of the disease process and restoring the hearing function necessary for the proper psychosocial development of the child[21].

Difficult contact with an autistic child means that not only hearing loss, but also other diseases in the field of otolaryngology are recognised late or remain unnoticed. This applies not only to the consequences of chronic otitis media with effusion, but also to other otolaryngologic disorders. Data from an interview in the autistic children's population may suggest the suspicion of other diseases in the field of otolaryngology. Recurrent upper respiratory tract infections and nasal patency disorders are common in the cases of tonsillar hypertrophy, nasal septum deviation, abnormalities of the side wall of the nasal cavity, and seasonal and perennial allergic rhinitis. Ear pain is the most common symptom of acute otitis media is preschool and school children. Children with autism present pain in a very clear way, which draws the attention of their carers to a serious health problem[22]. However, Adams et al. suggest that complications of acute otitis media which require otosurgical intervention occur proportionally more frequently in children with autism than in children without developmental disorders[23].

Numerous otorhinolaryngological problems in children with autism, and in particular otological problems that occur often in this group, suggest the necessity of covering this population with the systemic otorhinolaryngological care. It also seems necessary to perform periodical objective audiological tests in this group of children, allowing for the early detection of hearing loss, which enables rapid specialist treatment. This is also important for other problems in the area of otorhinolaryngology, whose symptoms often go unnoticed by the caregivers of a child with autism.

Conflict of interest

The author does not declare any financial or personal links with other persons or organisations that might adversely affect the content of the publication or claim any right to the publication.

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