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AN OVERVIEW OF PEDIATRIC APPROACHES TO CHILD WITH DEVELOPMENTAL DELAY ESPECIALLY IF THERE IS SUSPICION OF ASD IN FIRST FEW YEARS OF LIFE

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ABSTRACT

To be a pediatrician means that one encounters many serious childhood health problems and one finds many ways to help families cope with these problems. Symptoms in children can be discrete, and the responsibility of the pediatrician to distinguish normal development from pathological.

We are facing a new era in the developmental assessment of children. A cluster of neurodevelopmental disorders includes ASD (autism spectrum disorder) and ADHD (attention deficit hyperactivity disorder). Parents often do not recognize the problem on time. Generally, their first concern is speech delay, leading to the suspicion of hearing problems. Therefore, it is very important to obtain objective anamnestic information and for the child to undergo a careful physical examination, a neurophysiological assessment, and metabolic and genetic testing. The etiology usually is multifactorial: genetic, epigenetic, and non-genetic factors act in combination through various paths.

Most children seem to have typical neurodevelopment during first their year. It was found that approximately one-third of children with ASD lose some skills during the preschool period, usually speech related, but sometimes also non-verbal communication, social or play skills.

In conclusion we must say that it is very important to recognize the early signs of ASD and any kind of other developmental delay and to start with early intervention. Clinical pediatricians tend to correlate clinical manifestations and biological underpinnings related to neurodevelopmental disorder, especially ASD. Therefore, better treatment possibilities are needed.

Keywords: developmental assessment, developmental delay, typical neurodevelopment, ASD – autism spectrum disorders

INTRODUCTION

To be a pediatrician means that one encounters many serious childhood health problems, and one finds many ways to help families cope with these problems. Symptoms in children can be discrete, and the responsibility of the pediatrician to distinguish normal development from pathological.

We face a new era in the developmental assessment of children. Unfortunately, many children have developmental problems, most

likely due to the modern way of living, where parents have too many professional obligations. These obligations are often the reason for lack of parental attention to their children. This does not mean that parents are not interested enough in their child's behavior, but we must be more careful and critical during a child's developmental period. The aim of assessment is to discover if a child is at risk for neurodevelopmental disorders.

According to Rutter's Child and Adolescent Psychiatry [1], neurodevelopmental disorders have the following characteristics:

1) an onset that is invariably during infancy or childhood;

2) an impairment or delay in the development of functions that are strongly related to biological maturation of the central nervous system; and

3) a steady course that does not involve remissions and relapses which tend to be characteristic of many mental disorders.

We completely agree with the cited author in that impairments in most neurodevelopmental disorders tend to lessen as children grow older. Deficits, however, continue into adult life. If a child has adequate early intervention, the improvement of these symptoms can be vastly improved.

According to Anita Thapar and Michael Rutter [1], the cluster of neurodevelopmental disorders also includes ASD and ADHD. These disorders have been included in this cluster as they share the fact that they are multifactorial in origin, are present from early life, tend to improve with increasing age, but they are also associated with disordered functioning, a disordered functioning that extends into adult life. Both show a marked preponderance for the male sex.

Autism spectrum disorder affects more than 1% of the population [2]. Nearly the same was found by other authors [3] who report that approximately 1/100 children are currently diagnosed with ASD worldwide. The estimated prevalence has increased over time, and it has varied within and across sociodemographic groups. The prevalence of ADHD is slightly different. According to Song P. et al. 2021 [4], the worldwide prevalence of persistent ADHD in 2020 among from children (2.58%) and symptomatic adults (6.78%) represents a considerable international public health burden. Both persistent and symptomatic adult ADHD has become less common with advancing age. However, the high prevalence is not the only reason of our concern.

What are other causes for concern? Unfortunately, many parents do not recognize the real problem at time. Their first concern usually is speech development delay, and the parents then believe that this is tied to a hearing problem. Some parents report that their child is extremely intelligent, because he or she can search through the internet using mobile phone. Some parents report that only problem they see is that their child is extremely irritable. We cannot connect all of these problems to autism, but it is clear that these are signs of some kind of developmental delay.

Most of our everyday work as pediatricians is connected to parental reports. The time of in-office child observation is limited. As medical workers, we must be aware that children do not present all their developmental achievements in a health care setting. Therefore it is very important to receive objective information from parents [5, 6]. For example, during the first year of development, a lack of conventional gestures, such as nodding or pointing, would be a cause for concern.

Most children seem undergo typical neurodevelopmental phases during their first year. According to Catherine Lord and coauthors [7], approximately one-third of young children with ASD lose some skills during the preschool period, this is usually speech, but sometimes non-verbal communication is also lacking, social or play skills, as well. They reported that the rates of regression vary considerably because there is no universally agreed upon definition of autistic regression. The mean age of regression was during the second half of the second year of life. Catherine Lord supposes that this phenomenon appears to be unique in early childhood, but it is not universal for ASD. Histories and outcome of children with word loss were not consistent with a sudden change from normal to abnormal functioning, but it did suggest that this type of loss in the second year of life may be a useful 'red flag' for ASD in a significant minority of cases.

GENETIC FACTORS AS ETIOLOGY OF DEVELOPMENTAL DELAY AND ASD

The cause for developmental delay and ASD is always disturbing. It is generally accepted that etiology is multifactorial: genetic, epigenetic and nongenetic factors act in combination through various paths [8]. According to Rylaarsdam L. and Guemez-Gamboa A. [9], ASD is very genetically heterogeneous and may be caused by both inheritable and de novo gene variations. The authors underline that genetic modifiers such as copy number variation, single nucleotide polymorphisms, and epigenetic alterations play a key role in modulating the phenotypic spectrum of ASD patients. They also consider that genetic modifiers can alter convergent signaling pathways and thus lead to impaired neural circuitry formation.

It is important to discuss heritability in neurodevelopmental disorders. Many studies suggest that neurodevelopmental disorders are highly heritable. Of course, this conclusion was the result of many molecular genetic studies, even those published before the articles we quoted which have been published over the past 10-20 years. Many authors have utilized these data via association from large, rare copy number variants (subtle chromosomal deletions and duplications; CNVs), with multiple different types of neurodevelopmental disorders, including ASD, ADHD, and ID [10, 11, 12, 13]. Some authors like Ben-David and Shifman [14] identified two neuronal modules that are perturbed by both rare and common variations. These modules contain highly connected genes that are involved in synaptic and neuronal plasticity and are expressed in areas associated with learning, memory, and sensory perception.

Environmental and genetic factors also play a key role. In his work, Newschaffer and coauthors underline that many factors must be estimated, i.e., in utero exposures (including medications such as valproic acid, thalidomide, antidepressants, etc.), environmental neurotoxins (pesticides) and infections (congenital rubella). These factors have been hypothesized to increase the risk of ASD [15].

NEED FOR NEUROPHYSIOLOGICAL ASSESSMENT

Next to be discussed is the need for neurophysiological assessment. In the scientific world, it is a massive feat to provide all children with neurophysiological assessments and then explain the obtained results. The prevalence of epilepsy in patients with ASD varies widely from 2% (16) to 46% (17). And then there are children who do not have seizures and yet have extremely pathogenic EEG. According to Provenzano F. et al. [18], Subclinical Electroencephalographic Abnormalities (SEAs) in seizure-free patients with ASD are more frequently associated with lower intellectual functioning, more serious dysfunctional behaviors, and they are often a sign of more severe forms of autism. At the end of their work, the authors conclude: “To date, there is little consensus or conclusive evidence about the role of SEAs in determining the complex ASD phenotype. Hopefully, more cohesive practice and collaboration between researchers should lead to more conclusive results.” According to our experience we think that Subclinical Electroencephalographic Abnormalities must be evaluated and, in some cases, treated if the child has lack of attention, lack of concentration, and a lack of social contact.

METABOLIC TESTING

Children with autistic futures must be tested for inborn errors of metabolism, especially if they came from a region where neonatal screening is performed only past 18 months. The latest work in this field was the work of Inci A. et al. [19] who suggest that some types of inborn errors of metabolism (IEM) may present only with autism without other findings. In another article Žigman T. et al. [20] conclude that symptoms of ASD can be presented in many IEM, but rarely occur in isolation. Ghaziuddin M. et al. [21] suggest that the following disorders were identified in children with autism: phenylketonuria, glucose-6-phosphatase deficiency, propionic acidemia, adenosine deaminase deficiency, Smithe-Lemlie-Opitz syndrome and mitochondrial disorders, and the recently described branched chain keto-acid dehydrogenase kinase deficien-

cy. They conclude that the risk of autistic features is increased in children with inborn errors of metabolism, especially in the presence of cognitive and behavioral deficits. Additionally, we would like to quote the conclusion of Ahmadabadi F. et al. [22] in their review article: "although IEM may be relating to a small number of ASDs in general, we can't ignore the growing evidence about IEMs association with ASD".

HOW TO DEFINE NEURODEVELOPMENTAL IMPAIRMENT

There is great heterogeneity in the meaning of word "neurodevelopmental impairment". Of course, if we say that children with many disorders like autism, ADHD or ID have neurodevelopmental impairment that does not mean that the same mechanisms are applied. This is one of the reasons why parents are concerned when different experts provide different diagnoses for their child. In this context, some of them may say that the child has developmental delay, others may use terms like autism or neurodevelopmental impairment.

All infants from birth act and behave in individual ways, due to inborn temperament features. The primary caregiving attachment relationships which influence infants' development are of utmost importance. By contrast, an infant's temperament also affects the quality of parent–infant interaction and their attachment.

Unfortunately, many risk factors may disrupt an infant's development. An important determinant of the effects of traumatic exposure is the caregiver's ability to restore the sense of safety by the successful regulation of infant emotion, sleep, arousal, and attention [23]. Furthermore, limited access to health care and education can create a cumulative effect [24].

At this moment very little is available about infant mental health. It is useful to quote Tamminen T. and Puura K. (chapter 7 from Rutter's Child and Adolescent Psychiatry, Sixth Edition) that the field of infant mental health is still in its infancy. There are wide gaps in our knowledge. There is still a great need for studies on the validity of diagnostic criteria and the reliability of assessment processes concerning infants and toddlers.

To assess an infant in everyday health care work is very difficult. Clinicians face age-specific challenges. Infants and toddlers are active partners when interacting with others but limited in their communicative skills compared to older children. As clinicians, we are greatly reliant on information from caregivers, and on direct observation of infants. Rapid development during the first three years requires a great deal of experience in developmental perspective to differentiate normality from risk and pathology. The clinical interview is the cornerstone of assessment [5, 6]. Usually, it is easiest to start by discussing the problems and symptoms of the infant with the parents and other caregivers. Parental reports can provide us with information about an infant's constitutional characteristics and temperament, and of course the quality of parent-infant interaction. Family functioning and cultural and community patterns are important in assessing the quality of care and parenting, and will help show what may have affected the infant.

The list of problems facing infant functioning in the first year is very long. Different severity levels of feeding and eating problems occur in approximately 20–40% of normally developing 0 to 3-year-old children and in up to 80% among children with developmental disabilities [25]. Another frequently reported parental concern is infant sleep problems. These are common during the first three years. Significant sleep difficulties among this age group occurs in 15–35%, and most often include difficulties initiating sleep and waking up at night [26].

The next concern is connected to the absence of typical language development, and this becomes evident at about 2 years. Unfortunately, many parents ignore this moment, especially if they have relatives who start speaking later in their lives. Still, delay in language development is one of the first and most frequently expressed concerns of parents of children later diagnosed with ASD [27]. Some authors use videotapes from the infant period of children who are later diagnosed with ASD. For example, in their study of first birthday videotapes, Osterling and Dawson found that 4 behaviors correctly differentiated 90% of their sample of children who were later diagnosed with ASD from those without ASD. These were: low frequency of looking at others (including eye contact) and orienting to a name call, an absence of showing objects and a lack of pointing [28]. Observations of home videotapes

by Clifford and Dissanayake [29], revealed that infants later diagnosed with ASD showed deficits in social smiling and eye contact as early as 6 months compared with infants without ASD.

According to Barbaro J.& Dissanayake C. [30] retrospective parental reports have been used as a source of information about the development of ASDs in infancy. Unfortunately, not many parents recognize early symptoms like imitation of other persons, playing peek-a-boo, pointing at objects, seeking and enjoying cuddles, looking for their parents, be interested in other children, and waving bye-bye without being asked.

Young and his collaborators [31] asked 153 parents of children with ASD to complete a questionnaire concerning their child's very early development and the age of onset of problematic behaviors. Parents were primarily concerned about their child's difficulties in social awareness and understanding, lack of shared enjoyment in interaction, and poor eye contact. Little interest in other children and lack of social referencing (joint attention behaviors) were also reported, with 95% of parents indicating that these behaviors occurred before the age of 2 years.

WHAT IS ARE THE RED FLAGS IN DEVELOPMENT?

In conclusion, we quote Evdokia Anagnostou [32] regarding the importance of noticing red flags for autism in 12- to 18-month-old children: in area of social communication, in area of language development, in area of play, and in area of visual or other sensory and motor skills.

It is very important to recognize early signs of ASD and any kind of other developmental delay to start with early intervention. Baranek G. et al. [33] developed a parental questionnaire that focuses on the behavior of children at risk for ASD before 12 months, called the First Year Inventory. Watson LR et al. [34] reported their experience with a retrospective version of FYI (First Year Inventory) and gave this to parents of preschoolers with ASD, developmental disability, and typically developed children. They found that children with ASD were rated at significantly higher risk on the FYI than children with other developmental disabilities or a group with typical development. The children with ASD were reported to have more social deficits than typically developed children from as early as 3 to 6 months, and they have more deficits than children with developmental delay at 13 to 15 months. Of course, from a public health perspective, early intervention for children at risk of ASD requires valid identification of children who could benefit from these early services.

WHY DOES A DIAGNOSIS COME SO LATE?

One of the reasons for such late diagnoses is that diagnostic criteria according to the DSM-5 are adopted mainly to older children. For example, in order to be diagnosed with autism spectrum disorder, children must have difficulties in the area of social communication, including rarely using language to communicate with other people; not speaking at all; rarely responding when spoken to; not sharing interests or achievements with parents; rarely using or understanding gestures like pointing or waving; using only limited facial expressions to communicate; not showing an interest in friends or having difficulties making friends; rarely engaging in imaginative play. Furthermore, children must have difficulties in the area of restricted, repetitive, and/or sensory behaviors or interests to be diagnosed with autism spectrum disorder. This includes: lining up toys in a particular way over and over again; frequently flicking switches or spinning objects; speaking in a repetitive way; having very narrow or intense interests; needing things to always happen in the same way; having trouble with changes to their schedule, or changing from one activity to another; showing signs of sensory sensitivities like becoming distressed by everyday sounds like hand dryers, not liking the feel of clothes labels, or licking or sniffing objects [35].

In infants these symptoms are not always present.

Barbaro J.& Dissanayake C. [30], suggest that most predictive early signs in the first year of life are in the area of social attention - a lack of eye contact, social interaction, social smiling, imitation, orienting to name call, appropriate facial expressions, and interest and pleasure in others. In the area of communication, these markers include a lack of vocal communication, joint at-

tention skills (protodeclarative pointing, following a point, gaze monitoring, and referencing objects/events), showing and requesting behaviors and gestures. They also suggest that impairments in imagination skills, such as the use of pretend play, have also been found to be important markers in late infancy/toddlerhood.

SCREENING TESTS

M-CHAT is a tool which is widely accepted and used in pediatric practice in order to select children who have to be referred to the early intervention system. Usually, children who passed the M-CHAT received no follow-up. Of course, validation of the M-CHAT, including large scale screening and follow-up of an unselected population, is continuing [36, 37].

Swinkles S. et al. [38] and Dietz C et al. [39] described the development and validation of the Early Screening for Autistic Traits questionnaire. The ESAT is a questionnaire designed for screening 14–15-month-old infants. Later, Watson LR et al. [40] conclude in their work that most retrospectively reported items on the FYI are sensitive to clinically relevant group differences among preschool children. They found a large effect size for group differences in mean total risk scores. The FYI-R also classifies children for risk for ASD relatively well. However, the authors have one important remark, namely that children who show a pattern of typical development followed by regression after 12 months, will likely be missed in this screening. Further, Watson and colleagues report that there is no ‘‘gold standard’’ that allows for immediate confirmation that a 12-month-old with an FYI score in the risk range is indeed on the trajectory for developing ASD. Conducting screenings for ASD at such a young age entails grave responsibilities for researchers and practitioners regarding the information they present to families, and the care they take in doing so. These responsibilities are heightened by the fact that broad-based early screening for a specific developmental disorder, such as ASD, will inevitably lead to some false positives among children who are completely healthy and typically developing.

The second very important issue is developmental regression at the end of first year and during the second year of age. According to Rogers SJ [41], although several studies have documented the validity of parental reports of regression using home videos, data suggest that most children who demonstrate regression also demonstrated previous, subtle, developmental differences. Additionally, the author emphasizes that although autism is not the only condition in which regression occurs, it appears to be the most frequent condition. Another systematic review published in 2021 by Tan C et al. [42], reported that 32% of children on the autism spectrum experience have skill loss, known as autistic regression. However, the frequency varied depending on the definitions and measures used to capture skills. Retrospective parent reports and prospective observations indicate loss of language and/or social skills, with motor skills typically unaffected. A meta-analysis conducted by Braid and colleagues [43], found that across 28 studies, the average reported age of regression was around 20 months of age. The authors conclude that regression was associated with a higher rates of autistic symptoms and a deviation in developmental trajectory. They think that regression was not associated with epilepsy or gastrointestinal problems.

The second year of the life is a period when children achieve developmental milestones which are present with specific behaviors, meaning that parents may be able to recognize any potential changes or declines in behavior. The appearance of impairments in social communication skills and restricted behaviors, coupled with losses in developmental skills, can create challenges in understanding the trajectory of a child’s development.

Another very important means of evaluating a child is to assess a child’s gesture development. This emerges in the second half of the first year of life. The first intentional use of communication is via the sequence of deictic gestures, predicting the emergence of the first words. Soon thereafter, symbolic play schemes and representational gestures emerge and complement spoken forms. Gesture shares underlying cognitive skills with both receptive and expressive vocabulary. An inability to produce play schemes can act as a prognostic indicator of late talking toddlers according to Capone & McGregor [44].

GESTURE AND LANGUAGE REGRESSION

Research devoted to early communication skills shows that gesture production is a strong predictor of language in typically developed children, but the association between gestures and language in ASD is still unknown. Ramos-Cabo et al. [45], found evidence that gesture production is indeed a reliable predictor of early communicative skills and that both quantitative and qualitative differences have been established in research in the development of verbal and non-verbal communication skills in ASD, with lower gesture rates at the quantitative level, and a trajectory that starts deviating from the TD (typically developed) trajectory only at some point after the first year of life.

In this context, specific attention should be focused on language regression. Wilson and colleagues [46] assessed 196 children with language regression and conclude that even if some children have recovery, language regression is a serious disorder with significant long-term morbidity. In younger children, language regression usually occurs within the context of a more global autistic regression. This is quite the red flag, and many professionals think that the interval between the regression and referral remains unacceptably long. Of course, a child should have a certain level of expressive language prior to skill loss which is needed for coding 'regression' [47].

In the simplest terms, regression in childhood means that child is losing a skill that he/she once had. If a child has a few words but then stops using them, we can speak about regression in speech. Losing other social skills during early childhood is a red flag for ASD. Usually, social skill loss is also extensive, involving the loss of eye contact, as well as the loss of social interests and imitative games. Some children, of course a minority of ASD-with regression, lost motor skills and basic adaptive skills, such as self-feeding and toileting [48]. Some authors [48, 49] found that no relationships have been identified between autistic regression and any characteristic family feature. Differences in socioeconomic status, ethnicity, birth order, high-risk birth events, gender and age at diagnosis are not associated with regression.

Nouf Backer Al Backer [50] concludes, regarding regression, that "interpretation of the existing data regarding regression is complicated by the usage of multiple, often poorly defined, operational definitions. It seems that children with mixed and language ASD-with regression are more likely to have cognitive deficiencies compared to children with ASD-with no regression, as well as higher levels of autistic symptomology, particularly in the area of social communication symptoms".

WHY IS DEVELOPMENTAL DELAY, ESPECIALLY ASD, SUCH A SIGNIFICANT CHALLENGE FOR PEDIATRICIANS?

What are the alarm signals for immediate developmental assessment? Maybe the answer lies in fact that ASD is a neurodevelopmental condition with a highly diverse clinical expression, reflecting etiological heterogeneity [51]. For example, children with ASD who had a documented rare metabolic or mitochondrial disorder have been reported to have higher rates of regression than those without such diagnoses [52]. But in this context, we must emphasize that regression has not been associated with medical factors such as vaccinations [53].

Clinical pediatricians tend to correlate between clinical manifestations and biological underpinnings related to neurodevelopmental disorder, especially ASD. Through studying syndromic comorbidities of ASD and gene expression studies in postmortem brain tissue of autistic patients, we have learned about the genetic and biological pathways that are potentially related to ASD. The brain, its development, and neuronal connections, are the biggest fields of interest from a pediatric point of view. It is well known that the human brain forms during gestation and continues to mature into the postnatal period, especially in first year of life. In ASD, the majority of studies indicate little or no change in cell number but disrupted architecture has been noted.

For pediatricians, it is also important to know that ASD is associated with decreased head circumference early in infancy, but significantly increased head circumference after 6

months [54]. This physical sign must be followed up with, especially in high-risk infants (infants who have siblings with ASD) but also in the regular follow up of all infants. Correspondingly, evidence from structural imaging studies show that the brain size of ASD children is reduced at birth, followed by rapid rate of brain growth, and early cessation of growth by 2 to 4 years of age [55]. Thus, it is a fact that postmortem brain tissue in children with ASD has a significantly increased number of neurons, particularly in the prefrontal cortex [56], suggesting that regional proliferation could be impaired.

According to the groundbreaking work of Yang and Shcheglovitov [57], evidence for possibly disrupted neurogenesis and neural proliferation can be observed from clinical head size measurements, structural imaging studies on brain size, and the examination of postmortem brain tissues. It should be noted that many samples are from adults, and the timeframe for the apparent changes in cell numbers is unknown. There is a need to understand whether and how disruption in the various stages of neurodevelopment may lead to a common set of symptoms that are observed in specific subsets of ASD patients in light of patients' genetic background (sub-phenotyping at the cellular level). Therefore, new approaches are needed to systematically identify and characterize the biological convergence points that can serve as biomarkers for specific autistic phenotypes.

CONCLUSIONS

All children must be screened for behavior disorders at regular pediatric visits. While the screening of development is focused most on early identification during the infancy and preschool years, pediatricians must exclude all medical conditions that contribute to such behavior.

When screening confirms a developmental concern in a child, the pediatrician must order a medical evaluation for determination of etiology of the developmental concerns. Pediatric subspecialists, such as neurodevelopmental pediatricians and child neurologists, can initiate the diagnostic evaluation. This medical evaluation is needed to find any underlying etiology and initiate related medical treatments. Medical evaluation should include review of the child history, environmental, medical, family, and social histories; metabolic screening or review of newborn metabolic screening if it was done on birth; growth charts and a comprehensive physical examination. Physical examination should be done to determinate dysmorphic features, organomegaly, skin manifestations of neurocutaneous disorders, heart murmurs, neurologic abnormalities, etc. Vision screening and audiologic evaluation should be performed when indicated, especially in cases when a newborn screening was missed.

The recommendations for genetic testing, according to APA [58], are: "Chromosomal microarray and fragile X testing are recommended for all children with ASD to predict prognosis. Chromosomal microarray will reveal genetic abnormalities in up to 42% of children with ASD. Fragile X testing is positive in less than 1% of patients with ASD, but it is important for genetic counseling. Targeted testing for disorders such as tuberous sclerosis and Rett syndrome is useful only if presentation suggests these disorders. Whole exome sequencing shows an abnormality in up to one-fifth of patients with ASD and can be considered if other testing is negative."

The next step is referral for therapeutic intervention to the early intervention program. Early intervention leads to better outcome. Early intervention includes childhood special education, physical therapy, speech-language therapy, occupational therapy, and/or behavioral therapy. Early intervention can start at the same time with initiation of the medical evaluation.

Unfortunately, were it is possible to track these children, one would find that many families did not follow the recommended referrals.

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Резиме

ПРЕГЛЕД НА ПЕДИЈАТРСКИОТ ПРИСТАП КОН ДЕТЕТО СО ЗАСТОЈ ВО РАЗВОЈОТ ОСОБЕНО АКО ПОСТОИ СОМНЕЖ ЗА АСД ВО ПРВИТЕ НЕКОЛКУ ГОДИНИ ОД ЖИВОТОТ

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Да се биде педијатар значи да се има контакт со многу сериозни проблеми кај децата и многу начини за справување на семејството со проблемот. Симптомите кај децата можат да бидат дискретни и затоа одговорноста на педијатарот е огромна во разликувањето на нормалното од патолошкото.

Се соочуваме со нов период во развојната процена кај децата. Во збирот на невроразвојни растројства спаѓаат и АСД (нарушување од групата на аутистичниот спектар) и АДХД (намалено внимание со хиперактивност). Најголемиот проблем е што родителите не го препознаваат вистинскиот проблем навреме. Најголемата грижа најчесто е поврзана со говорот, и тоа се поврзува со проблемите со слухот. Затоа е многу важно да се добијат објективни анамнестички податоци и да се направи внимателен физички преглед, невропсихолошка процена, метаболен и генетски скрининг. Етиологијата најчесто е мултифакторска: генетски, епигенетски и негенетски фактори дејствуваат во комбинација и на различни начини.

Многу деца изгледа дека имаат типичен невроразвој во првата година. Најдено е дека една третина од децата со АСД ги губат своите вештини во претшколскиот период, особено оние поврзани со говорот, но понекогаш и со невербалната комуникација, социјалните вештини и играта.

Како заклучок, може да кажеме дека е многу важно да се препознаат рано знаците за АСД и на други развојни растројства за да се започне со рана интервенција. Клиничкиот педијатар се труди да направи корелација меѓу клиничките манифестации и биолошките основи поврзани со невроразвојните растројства, особено кај АСД. Причината за тоа е подобар приод кон можностите за третман..

Клучни зборови: процена на развојот, развојно заостанување, типичен невроразвој, АСД (нарушување од групата на аутистичниот спектар)