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AUTISM SPECTRUM DISORDER IN CHILDHOOD AND ITS PROGNOSTIC FACTORS

Lara Gonçalves Faleiros Cardoso
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/4718620074559077

Cayo Rodovalho Nascimento
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/8010251772012743

Maressa Sarah de Oliveira Resende
Centro Universitário IMEPAC
https://lattes.cnpq.br/2059474491455678

Lucas Gonçalves Álvares
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/6405562714794628

Maria Fernanda de Assis
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/5547400622978663

Larissa Silva de Andrade
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/8915554784764829

Gabriela Leite Varjão
Centro Universitário IMEPAC
http://lattes.cnpq.br/8579913666828646

Laura Stephany Ferreira
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/4792461359065669

Allisson Antônio Alvarenga Garcia
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/4252046918759172

Thais Candido Alves e Silva
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/7948642086008480

Beatriz Pintaud de Freitas
Centro Universitário IMEPAC
Araguari – MG
http://lattes.cnpq.br/4976857620036290

Abstract: Objective: Perform the analysis and review of available articles on the identification of autism in childhood and its prognostic factors. **Methodology:** The study consists of a literature review carried out with review articles published between 2015 and 2023, based on data collection in the scientific databases Scientific Electronic Library Online (SciELO), Google Scholar and LILACS. **Results:** 06 articles had the eligibility criteria for the theme and were used to compose the review. Studies have shown that there are alternative therapeutic options that favor the prognosis of ASD in terms of improving children's cognitive and social development. Thus, it is extremely important to carry out an early diagnosis of ASD linked to multidisciplinary support, guaranteeing comprehensive care. However, studies point out that there is still a lack of investment in studies that better elucidate the mechanisms and benefits of therapeutic alternatives, making them viable and accessible to children with ASD and their caregivers. **Conclusion:** ASD can be diagnosed early and addressed in such a way that there is a good prognosis in the child development of these patients. However, for this it is necessary that more studies be carried out to deepen the alternative therapies that already exist in order to potentiate them and make them a safe and effective option in the consolidation of the individual care of children with ASD.

Keywords: autism spectrum disorder; child; treatment; prognosis; child development

INTRODUCTION

Psychiatrist Leo Kanner in 1943 first described autism as a disorder in which children who had social behavior problems and a high sensitivity to changes in their environment. Since then, there has been an increase in the prevalence of Autism Spectrum Disorder (ASD), which can be

partially attributed to the evolution of diagnostic criteria and the increase in social awareness about the subject, which leads to early diagnoses[2].

The pathophysiology of ASD permeates several aspects, among them, the influence of genetics which, according to American studies, is present in 50% of cases. This mechanism occurs through a diverse group of mutational events along diverse biological pathways. Other factors correlated with the establishment of ASD are environmental factors, which can be classified into: prenatal, in utero and perinatal risks. Prenatal risks include advanced paternal or maternal age and maternal metabolic conditions such as diabetes mellitus, hypertension, and obesity. In utero risks include exposure to valproate (Depacon), maternal infections, and exposure to pesticides. Perinatal events such as low birth weight and preterm delivery increase the risk of ASD as part of the increased overall risk of neurodevelopmental injury[2].

In view of this, investments in new treatments aimed at improving the trajectory of the disorder have been growing more and more. However, pharmacotherapy mainly aims to address the secondary or comorbid symptoms of ASD, not addressing the central symptoms of communication and social interaction, making it necessary to associate pharmacotherapy with behavioral interventions and in the development of children with ASD, such as, for example, occupational therapy, speech therapy, physiotherapy, teaching support, equine therapy, clown doctors, among others[3].

Thus, the present study aims to optimize therapeutic strategies based on the investigation of the factors and possible determinants that influence a good or bad prognosis in children diagnosed with ASD. In addition to addressing drug and non-drug treatments for this patient population. Aiming to evaluate the impact of a well-optimized treatment on the development of children with ASD.

METHODOLOGY

This is a qualitative exploratory study of the Literature Review type using secondary sources such as randomized experimental studies. The data used were extracted from the PUBMED and Scielo database, in national and international journals, using descriptors on the subject.

Initially, the descriptors Autistic Spectrum Disorder and Children were used, resulting in a total of 37,362 articles. Subsequently, the terms Treatment and Prognosis were added, reducing the number of 3,840 articles. Finally, the Child Development descriptor was used, reaching a total of 285 articles. At the end, the following keywords were used: Autistic Spectrum Disorder; Child; Treatment; Childhood Prognosis and Development. Using the Boolean operators AND, OR and NOT to cross the above descriptors

As an inclusion criterion, research carried out between 2015-2023, published in Portuguese and English, and without cost for access to the study were selected. Articles that did not address the topic or research objectives were excluded. After using these criteria, only 6 articles remained, all of which were read and analyzed for selection in the construction of this article.

DISCUSSION

Initially, we will address the diagnostic criteria of children with ASD and some of its main characteristics such as deficits in social communication, restricted and repetitive patterns of behavior, loss or selectivity of interest in activities. From this analysis, it is possible to identify the level of severity and the degree of functional impairment. Some signs and symptoms may appear between six

and 12 months of age, but in most cases, the diagnosis can be made at 24 months of age, where it is already possible to observe a set of developmental changes that direct the gaze to the diagnosis of ASD. Social deficits and speech delays are the most prominent features in children under three[2].

There are also other common factors that may be less apparent in younger children and that become more evident over the years, such as difficulty changing routine, hyper focus on just part of a toy or on a subject, stereotyped movements, like clapping your hands, walking on tiptoes, or wiggling your fingers near your eyes. In this sense, screening tools help to identify these changes and direct care to children who may need a more complete evaluation and benefit from an early diagnosis. However, there are no randomized clinical trials that analyze long-term outcomes, evaluating the effectiveness of screening for ASD in children aged three years or younger, which contributes to under diagnosis and to the undervaluation of screening for ASD in cases where caregivers have no complaints[2].

In view of this, routine development screening is suggested only in childcare consultations at 09, 18 and 24 months. Assessment for ASD must be comprehensive, preferably by an interdisciplinary team, in order to correctly diagnose, exclude conditions that mimic ASD, identify comorbidities, and determine the child's level of functioning. It must also include a complete history with direct assessment of social communication skills, investigation of the presence of behaviors characteristic of ASD. For this, tools with standardized tests of language and cognitive skills can be used. Diagnosis must be confirmed using DSM-5 criteria for ASD[2].

After the diagnosis, it is extremely important that an effective approach be instituted that acts to minimize the suffering of the patient and the caregiver. A systematic review by the Agency for Healthcare Research and Quality conducted in 2014, demonstrated with level of evidence type A, the use of cognitive-behavioral therapy to reduce anxiety in older children with autism spectrum disorder who have an average IQ or above from the average. Melatonin also has a type A level of evidence in controlling sleep disorders and improving daytime behavior, with minimal adverse effects in children with autism spectrum disorder[2].

Currently, complementary and alternative medicine (CAM) can be defined as a diverse group of therapies that encompass different systems, practices and health products that are not normally used in conventional Western medicine. Within these therapies, we can mention mental and bodily practices, in addition to natural products such as special diets[6]. From a health point of view, currently, the association of CAM on its own and pharmacological drugs prescribed by physicians is widespread and common, representing a possible risk for potential interactions and other types of harm, such as chelation, excessive antibiotics or unnecessary amounts of vitamins. As the prevalence of supplementation and special diets is high, an improved understanding of CAM use is needed.

With this information, Trudeu et al. (2019) conducted a population-based cross-sectional study with children diagnosed with ASD who had cognitive and/or developmental delay in which parents/guardians were the intermediaries to describe the use of food supplements and special diets. When analyzing the data from the questionnaires applied during the research, the five most common supplements used by the sample were listed, namely: multivitamins, vitamin D, omega 3, probiotics and magnesium. Other supplements such as N-acetylcysteine, 5HTP, fluoride, methylfolate, adrenal cortex extract,

selenium, cannabidiol and methatonin were also cited. Regarding special diets, the main influences were unrestricted, gluten-free, carbohydrate- or protein-rich, lactose-free and ketogenic diets. When evaluating the parents' reasons for offering supplements to children with ASD, the main objectives were: to improve the child's diet, promote a better functioning of the immune system and increase the quality and duration of sleep. In addition, the justification for the widespread adherence of multivitamins is based on the dietary deficiency often observed in children with ASD, such as, for example, deficiencies in calcium, vitamin D, vitamin K, vitamin A and zinc.

The results found in the study were consistent with other previous studies on the subject, thus reflecting the continuous increase in the use of dietary supplementation and the interest in using CAM as a complementary approach to standard care treatment. However, research on the effectiveness of these supplements in children with ASD requires further evaluation. In the medical literature, there are studies that found significant improvements in hyperactivity, anger outbursts and communication, when associated with the use of vitamin supplements and standard therapies for ASD. However, no other studies have been able to replicate the effectiveness or safety of this combination. In this same context, research evaluating special diets showed similar ambiguities, as many studies are small and lack a rigorous methodology in relation to dietary control. Evidently, the use of CAM requires more systematic and rigorous research, due to the existence of large gaps to support the use of any nutritional supplement or dietary therapy in patients with ASD[6].

In another study about non-drug methods in ASD, the use of horses as a new and effective therapeutic method was addressed. Equine therapy is the planned and controlled application of horse riding in order to improve the quality of life of those whose development is at risk. This can be a therapeutic method individually or in a group. Currently, there are several types of hippotherapy, and the choice of which type to use is based on the patient's symptoms and the therapeutic objectives. Horse therapy exerts its multidisciplinary effects by regulating muscle tone dysfunction, balance, coordination and control of head and neck movements. In addition, as it is a therapy administered in a natural environment, equine therapy is able to broaden the experience, increase self-confidence, improve self-expression and the patient's independence. Therefore, equine therapy is a complex but efficient method in the prevention, improvement and cure of ASD symptoms[5].

In previous studies, a theory related to the functional organization of the brain in ASD was created, based on a typical asymmetry to the right, affecting higher sensorimotor and cognitive functions. In a double-blind controlled study, Steiner and Kertesz (2015, p. 324-335) investigated the possibility of equine therapy as an alternative therapy for children with ASD. The investigated sample was divided into two groups: experimental group and control group. The first held equine therapy sessions for 30 minutes a week, in addition to receiving pedagogical education sessions. The second group was exposed to only pedagogical sessions and physiotherapy for one hour a day. During the experiment, in addition to the children's gait, adaptive and communication skills, use of roles, self-care and socialization were evaluated. At the end of the study, it was observed that the skills of the riding group were significantly better in relation to all parameters. Furthermore, the control group that received physiotherapy without any interaction with horses, showed an improvement in gait on the left side and a

worsening on the right side, thus resulting in an increase in the already existing asymmetry. The results found in this study corroborate the hypothesis that equine therapy is an alternative and effective treatment method to improve the condition of children with autism, being useful for obtaining a better gait and orientation cycle, in addition to improving mental abilities[5].

Some recent studies have shown the benefits of PM among children with intellectual disabilities, such as ASD, for example, a disorder that causes a deficiency in the ability to recognize facial expressions and understand communicative gestures. In this context, the exaggerated and mimic facial expressions used by the MP can be a path to a better understanding of human emotion for children with ASD. Therefore, in a randomized study, SHEFER et al. (2019), observed children diagnosed with ASD in two conditions: intervention with the clown doctor (IMP) and other types of intervention. In the first group, the clown used body and facial language, expressions, sounds, tricks in order to encourage children to laugh, interact, play, in addition to reproducing the norms of the group, such as, for example, taking turns with objects and waiting for the final. The other interventions (OI) were based on group activities, such as music therapy, play therapy, among others. The children were evaluated in four spheres: 1- repetitive and stereotyped behaviors; 2- spontaneous production of meaningful words; 3- social smiles; 4- play "catch the ball". The two types of interventions, IMP and OI, were performed once a week for 12 weeks. At the end of the research, a decrease in stereotyped behaviors during and after therapy in the IMP group was concluded. In addition, when compared to the OI group, children who had contact with the PM had their verbal production improved and social smiles were an immediate and constant response. The improved reciprocal ball pitching also showed positive results similar to the other areas. All the improvements mentioned above persisted over time[3].

Regarding drug therapies, currently, there are no established drugs for the main autistic symptoms. Risperidone and aripiprazole are approved by the US Food and Drug Administration (FDA) to treat irritability, but these drugs often cause obesity and metabolic syndrome. The efficacy and tolerability of pharmacotherapies that address disruptive behaviors are relatively low. There are several studies that elucidate alternatives with a potential effect on ASD but that require greater investment[4].

It was also possible to observe, in an Israeli research developed in a large reference center, through randomized, double-blind, placebo-controlled studies, preliminary evidence that treatment with cannabinoids can improve the central symptoms of ASD. This finding could be of great importance if confirmed in future studies, as studies exploring pharmacological interventions for the core symptoms of ASD are scarce[1].

In view of this preliminary evidence, new pharmacological treatments for the core and comorbid symptoms of ASD are urgently needed, after all, preclinical studies elucidate that the endocannabinoid system is present in the pathophysiology of ASD and that its administration improved disruptive behaviors with acceptable adverse events. These data suggest that cannabinoids must be further investigated in ASD[1].

CONCLUSION

This study evaluated the characteristics present in the biopsychosocial development of children with ASD in terms of how they affect their social and environmental relationships. In addition, it analyzed drug and non-drug treatments and the impact of each

therapeutic method on the prognosis of these children, where, in addition to the remission of symptoms, variables related to cognitive impairment and global improvement of the patient were addressed.

It was possible to conclude that the majority of children with ASD have difficulty changing their routine, hyper focus on just part of a toy or on a subject, stereotyped movements, such as clapping their hands, walking on tiptoe or wiggling their fingers close to each other. From the eyes. This prevalence directs the diagnosis and enables the use of screening for early identification, a complete and individual approach, which may result in a better prognosis and care for caregivers.

Regarding drug therapies, currently, there are no established drugs for the main autistic symptoms, however there are studies that correlate the use of cannabinoids with the improvement of the central symptoms of ASD, but which still lack further elucidation about their real benefits and mechanisms.

Other non-pharmacological alternatives have been shown in some studies to be favorable to improving socialization, communication and other aspects affected by ASD, such as the use of cognitive-behavioral therapies. There was also a high prevalence of the use of dietary supplements and special diets in children with ASD but, due to the little scientific evidence, there is a limitation of the medical consensus on the subject. Consequently, further studies on CAM are needed. In addition, it was concluded that indicating interventions with PM can improve the expressiveness and non-verbal communication of children with ASD, in addition to having a positive influence on repetitive and stereotyped behaviors.

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