

Multidisciplinary therapies in the treatment of children with an autism spectrum disorder: a case report

Terapias multidisciplinares no tratamento da criança com transtorno do espectro autista: relato de caso
Terapias multidisciplinares en el tratamiento de niños con trastorno del espectro autista: reporte de un caso

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Abstract

Purpose: To describe multidisciplinary interventions aimed at treating a child diagnosed with an autism spectrum disorder. **Case description:** The mother sought medical help for her son who exhibited language delays. He was agitated, did not respond to calls, and exhibited a delay in speech development. For psychopharmacological treatment, risperidone 1 mg/mL associated with vitamin D, was prescribed. Multidisciplinary therapies were proposed and applied according to the patient's needs. In sessions with a speech therapist, he responded to all stimuli, demonstrating good interest in the proposed activities and maintained good eye contact. He performed several circuits to improve posture, image, laterality, and body scheme. After participating in hippotherapy supervised by several professionals, the child exhibited an improvement in social interaction, motor performance, especially in posture practice, and in communication. After interposing equine-assisted therapy with intellectual clinic sessions, he started activities at an inclusive school. **Discussion:** Multidisciplinary interventions demonstrated effectiveness and continuous and positive evolution in the patient. Studies reporting multidisciplinary therapies are relevant for demonstrating the importance of this method and the adaptation to the reality of each autistic patient.

Descriptors: Autistic Disorder; Equine-Assisted Therapy; Clinical Evolution.

Resumo

Objetivo: relatar um caso de uma criança diagnosticada com Transtorno do Espectro Autista (TEA). **Descrição do Caso:** A mãe do paciente procurou ajuda médica com queixa que seu filho apresentava atraso na linguagem. Apresentava agitação, não correspondia aos chamados e possuía atraso no desenvolvimento da fala. Para o tratamento psicofarmacológico foi prescrito risperidona 1mg/ML associada à vitamina D. Foi proposto terapias multidisciplinares, aplicadas de acordo com as necessidades do paciente. Na terapia com Fonoaudiólogo, correspondeu a todos os estímulos, demonstrando interesse pelas atividades propostas e bom contato visual. Realizou diversos circuitos para melhorar a postura, imagem, lateralidade e esquema corporal. Após participar de equoterapia acompanhado por diversos profissionais, a criança apresentou melhora na interação social, desempenho motor, principalmente na prática postural, e na comunicação. Ao intercalar as sessões de equoterapia com as de Clínica Intelectual, iniciou atividades em uma escola inclusiva. **Discussão:** As intervenções multidisciplinares apresentadas demonstraram eficácia no tratamento, evolução contínua e positiva do paciente. Trabalhos relatando terapias multidisciplinares são relevantes por demonstrar a importância deste método e a adaptação à realidade de cada paciente autista.

Descritores: Transtorno Autístico; Terapia Assistida por Cavalos; Evolução Clínica.

Resumen

Objetivo: reportar un caso de un niño diagnosticado con Trastorno del Espectro Autista (TEA). **Descripción del caso:** La madre de la paciente buscó ayuda médica quejándose de que su hijo tenía retraso en el lenguaje. Estaba agitada, no respondía a las llamadas y tenía un retraso en el desarrollo del habla. Para el tratamiento psicofarmacológico se prescribió risperidona 1 mg / ML asociada a vitamina D. Se propusieron terapias multidisciplinares, aplicadas según las necesidades del paciente. En terapia con un logopeda, respondió a todos los estímulos, mostrando interés en las actividades propuestas y buen contacto visual. Realicé varios circuitos para mejorar postura, imagen, lateralidad y esquema corporal. Luego de participar en hipoterapia acompañado de varios profesionales, el niño mostró mejoría en la interacción social, el desempeño motor, especialmente en la práctica postural, y en la comunicación. Intercalando las sesiones de terapia asistida por caballos con las de la Clínica Intelectual, inicié actividades en una escuela inclusiva. **Discusión:** Las intervenciones multidisciplinares presentadas demostraron eficacia en el tratamiento, evolución continua y positiva del paciente. Los trabajos que reportan terapias multidisciplinares son relevantes para demostrar la importancia de este método y su adaptación a la realidad de cada paciente autista.

Descritores: Trastorno Autístico; Terapia Asistida por Caballos; Evolución Clínica.

INTRODUCTION

Autism spectrum disorder (ASD) is characterized by complex developmental disabilities that primarily affect language, social interaction, and behavior¹. It is possible to verify the stage of the disease according to the subject's genetic profile and their environment, which can manifest in different ways throughout their development and chronological age². Syndromic ASD is considered to be present before 3 years of age, which enables diagnosis as early as 18 months³ based on clinical criteria and family reports.

Highlighting the child population, one in 59 children worldwide has ASD⁴ and, in Brazil, it is estimated that two million individuals are affected. Despite being numerous, these autistic patients continue to encounter difficulties with finding treatment from a multidisciplinary team due to the scarcity of professionals able to address all areas affected by this disorder².

Because ASD is considered to be multifactorial, multidisciplinary therapy is essential and unique for each patient^{3,5}. Accordingly, the present study aimed to

determine the utility of multidisciplinary therapies in the biopsychosocial evolution of children with ASD. These multidisciplinary therapeutic processes were analyzed based on the patient's medical record and information reported by the patient's mother.

CLINICAL CASE

The present study was performed in compliance with ethical principles, and was approved by the Research Ethics Committee of *Faculdades Integradas de Santa Fé do Sul-FISA/FUNEC* (no. 3,235,749). The mother, who was the legal guardian of the patient, provided informed written consent. A male child diagnosed with ASD (*International Classification of Diseases, 10th Revision*, code F.84) at 2 years 9 months of age at the State Center for Rehabilitation and Readaptation by Dr. Henrique Santillo (*Centro Estadual de Reabilitação e Readaptação Dr. Henrique Santillo - CRER*), accompanied by his mother, who reported a delay in language development. The patient was agitated, did not respond to calls, and exhibited a delay in speech development. The pregnancy was uneventful, and there was adequate motor activity. No family history of psychiatric or mental disorders was reported.

In neuropsychiatric care, jargonaphasic speech, hyperactivity, self- and hetero-aggressive behavior, difficulty with social interaction and establishing eye contact, motor stereotyping, aversion to touch, gestural communication, difficulty with handling objects, and abnormal attachment to cars and shape-fitting games were reported. Psychopharmacological treatment included risperidone 1 mg/mL twice daily, and vitamin D (5 drops once daily). After three years of risperidone therapy, dosing was changed to 1 mg/mL per day. Multidisciplinary therapies were performed according to the patient's individual needs and involved an interdisciplinary team. During treatment with a speech therapist, the child was able to participate and respond to stimuli and light help demands, but exhibited difficulty with maintaining eye contact. After less than one month of therapy, however, he responded to all stimuli, exhibiting good interest in the proposed activities and maintained eye contact. Initially, he performed some imitations and onomatopoeic sounds requested by the therapist. Episodes of jargonaphasic speech decreased, and interaction improved in all sessions through gestures and actions exhibiting good understanding. After 41 sessions, the patient interacted through isolated words, naming pictures and objects spontaneously, although difficult to understand. He engaged in

short dialogues, with intelligible and functional speech. In music therapy sessions, musical command, musical interaction, and eye contact presented inconsistently higher percentages (between 50% to 80% of the sessions). His musical command did not demonstrate consistent improvement, and musical interaction improved only slightly.

In treatment with the physical therapist, he performed several circuits to improve posture, image, laterality, body scheme, rhythm, static and dynamic balance, broad motor coordination, temporal-spatial orientation, visual and auditory discrimination, communication, interaction, and executive function within the possibilities of cognitive development. The activities were developed through stations composed of obstacles and objects such as balls, hula hoops, cones, building blocks (Lego, Lego Systems Inc., Billund, Denmark) trampoline, a proprioceptive walkway with varied textures, step, and labyrinth and tunnel, among others. In 70% of the sessions, the child was able to perform some circuits independently or with little verbal help. Improvement in posture, perception of sensory stimuli, and social interaction were supervised during hippotherapy sessions through incentives with the animal and pressure tapping.

In the first hippotherapy sessions, a psychologist was present to adapt the patient to activities with the animal. He exhibited irritability due to frustration with difficulty in performing the exercises but showed improvement in recognizing and naming images, emitting vowel sounds independently, with spontaneous speech at times, after examples used as an incentive. In a few meetings, he demonstrated vocal stereotyping.

He performed activities with the aid of a portable tablet-type computer (iPad, Apple Inc, Cupertino, CA, USA) and an illustrative book to verify initiative and wait time when performing activities that required memory, attention, emission, and naming of fruits and colors.

The child continued his activities under the supervision of the speech therapy service, as he presented jargonaphasic speech in addition to the frequent omission of the word "no." The language was stimulated by the emission of letters, vowels, numbers, animals, fruits, colors, and onomatopoeia. An increase in vocabulary was observed from the 13th session, and the child interacted well during most sessions through speech, requesting some objects orally, and with good eye contact.

The patient started interposing hippotherapy with intellectual clinic sessions to

stimulate functional oral communication. In the first sessions, he experienced difficulty maintaining dialogue and exhibited behaviors aimed at drawing attention, in addition to speech characterized by phonemic exchanges and omissions that compromised intelligibility, using jargon. With the proposed dynamics, he managed to recite some children's stories with a sequence of correct facts, performed articulatory training to improve speech intelligibility.

During the last 30 hippotherapy sessions, the patient worked on commanding the horse by controlling its speed and movements. He was able to guide the animal spontaneously, showing leadership and confidence throughout. He displayed good conduct and was willing, caring, and collaborative. He was accompanied, again, by a psychologist and assistant guides, with the aim of addressing psychomotor and social aspects. The child was able to work on spatial notion, laterality and balance, and responded well to cognitive stimuli. The patient performed the proposed activities with all of the horses and accepted the guides' commands spontaneously. After participating in hippotherapy accompanied by several professionals, including a psychologist, physiotherapist and speech therapist, the child demonstrated improvement in social interaction, motor performance, especially in posture practice, and in communication. He started follow-up with a pedagogue to stimulate learning, promoting the development of reading and writing. He performed well in the proposed activities, in addition to performing them at home supervised by his parents. With this positive progression, considering all of the aspects worked on, the patient started his studies at an inclusive regular school.

DISCUSSION

The therapeutic plan for ASD is applied according to the individual needs of the patient and his/her family. Thus, it is not possible to determine which therapies or the requisite number of sessions that define or direct treatment. In the case presented, the child underwent multidisciplinary therapies over a four-year period, with positive evolution in several⁶.

Case reports addressing ASD are relevant because they describe the therapeutic treatment and patient evolution, thus making it possible to compare patient profiles and the professionals involved. As described in the line of care for attention to individuals with ASD of the Unified Health System³, in this report, the child was submitted to both multidisciplinary therapies and psychotropic drugs, both of which are important for early and effective treatment.

According to a study by Silva et al.⁶, positive results for language development are favored by early diagnosis and treatment, initiated by the speech therapist.

Music therapy is one of several relevant therapeutic forms in studies involving patients diagnosed with ASD⁷. Therefore, this intervention contributes to the evolution of the child undergoing treatment, causing an improvement in socialization and communication. A study performed with an autistic child undergoing music therapy and submitted to the improvisation technique proved to be effective in the patient's evolution⁸.

Although the current literature describes techniques applied to music therapy, there is no apparent superiority among them⁵. Nevertheless, it can be considered that the majority obtain positive results, such as musical improvisation, which stimulates the patient's creativity with an improvement in cognitive aspects⁹.

Physical therapy was another significant modality in the child's evolution. It resulted in improvement in functional limitations, movement, coordination, and balance, which guaranteed the patient motor skills and autonomy, and more effective social integration.

The results of the hippotherapy sessions were consistent with previous research, which demonstrated positive developments in social functioning and motor skills¹⁰, as well as in vocabulary expansion¹¹. However, some of these data are inconsistent, as in the study by Anderson and Meints¹², in which children did not demonstrate improvement in socialization and communication after hippotherapy sessions. This can be explained by some limitations observed in the study, as the patients underwent a smaller number of therapeutic sessions and were not assisted by a multidisciplinary team. Another study had the same limitations, in addition to reporting the deficit in development and verbal comprehension.

Through the present report and the difficulty in comparing multidisciplinary results, it is important to note that ASD remains a subject of little knowledge among the population. Therefore, the results of the present study add to current information gaps in the literature and reveal the influence of the multidisciplinary approach in the treatment of this disorder.

Although many studies have investigated ASD, some aspects of multidisciplinary therapies have not been extensively examined by the scientific community.

The multidisciplinary interventions/approach described in the present report were

monitored by several professionals and demonstrated the effectiveness and continuous and positive evolution of the patient. Nevertheless, further studies are needed to confirm our results, which can be used by other researchers and professionals, especially those who work with children diagnosed with ASD.

REFERENCES

1. Rego SWSE. Autismo: Fisiopatologia e biomarcadores [dissertação]. Covilhã: Universidade da Beira Interior - Faculdade de Ciências da Saúde; 2012.
2. Zanolla TA, Fock RA, Perrone E, Garcia AC, Perez ABA, Brunoni D. Causas Genéticas, Epigenéticas e Ambientais do Transtorno do Espectro Autista. Cadernos de Pós-Graduação em Distúrbios do Desenvolvimento. 2013; 15: 29-42.
3. Brasil, Ministério da Saúde. Caderneta de Saúde da Criança - Menino. 12th ed. Brasília; 2018.
4. Paula CS. Epidemiologia sobre o Autismo. Motivação e Autismo; 2017.
5. Barros MRM. A música como mediadora no desenvolvimento cognitivo em crianças com perturbações autísticas: intervenção junto de uma aluna com perturbações autísticas [dissertação]. Lisboa: Escola Superior de Educação João de Deus; 2012.
6. Brasil, Ministério da Saúde. Diretrizes de Atenção à Reabilitação da Pessoa com Transtornos do Espectro do Autismo (TEA). 1st ed. Brasília: Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas; 2014.
7. Silva LM, Marinho C. A utilização da Musicoterapia no tratamento de crianças com Transtorno do Espectro Autista. Disponível em: <https://www.semanticscholar.org/paper/A-Utiliza%C3%A7%C3%A3o-da-Musicoterapia-no-Tratamento-de-com-Silva-Marinho/f5920640888e81ee0d3aef63c58248f833755937>
8. Freire M, Martelli J, Estanislau G, Parizzi B. O desenvolvimento musical de crianças com Transtorno do Espectro do Autismo em Musicoterapia: revisão da literatura e relato de caso. Orfeu. 2018;3(1).
9. Gattino GS. Musicoterapia e autismo: teoria e prática. Rev ABEM. 2015;25(38):139-42.
10. Borgi M, Loliva D, Cerino S, Chiarotti F, Venerosi A, Bramini M, et al. Effectiveness of a standardized equine-assisted therapy program for children with autism spectrum disorder. J Autism Dev Disord. 2016;46(1):1-9.

11. Gabriels RL, Pan Z, Dechant B, Agnew JA, Brim N, Mesibov G. Randomized controlled trial of therapeutic horseback riding in children and adolescents with autism spectrum disorder. J Am Acad Child Adolesc Psychiatry. 2015;54(7): 541-49.
12. Anderson S, Meints K. Brief report: The effects of equine-assisted activities on the social functioning in children and adolescents with autism spectrum disorder. J Autism Dev Disord. 2016;46(10):3344-52.

CONFLICTS OF INTERESTS

The authors declare no conflicts of interests.

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Received 04/01/2021

Accepted 16/07/2021