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REVIEW ARTICLE

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Imaging changes in children and adolescents diagnosed with autism spectrum disorder: a scoping review

Cambios imagenológicos en niños y adolescentes diagnosticados con trastorno del espectro autista: Revisión de la literatura

Alterações imagiológicas em crianças e adolescentes diagnosticados com transtorno do espectro autista: uma revisão da literatura

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ABSTRACT

Introduction: Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by difficulties in social interaction and communication, as well as repetitive behaviors. Despite its high prevalence, the pathophysiological basis of ASD is not yet fully understood. **Objective:** To analyze the findings of neuroimaging studies that provide evidence of pathophysiological changes in the brains of individuals with ASD. **Materials and methods:** A literature review was conducted using the PubMed, UpToDate, ClinicalKey, Google Scholar, and ScienceDirect databases between February and August 2024. Some of the guidelines of the PRISMA statement were considered to organize the search and article selection process. **Results:** The reviewed studies revealed structural differences in the amygdala, cerebellum, and other cortical areas, as well as alterations in neural connectivity and atypical patterns of brain activation. These dysfunctions are associated with difficulties in social interaction and sensory integration. **Conclusion:** Neuroimaging techniques provide valuable information on brain alterations associated with ASD and may contribute to early diagnosis and the development of more effective therapeutic interventions.

Keywords: Autism spectrum disorder; children; neuroimaging. (Source: DeCS, Bireme).

Sustainable development goals: Good health and well-being. (Source: SDG, WHO).

RESUMEN

Introducción: El trastorno del espectro autista (TEA) es un trastorno del neurodesarrollo caracterizado por dificultades en la interacción social, comunicación y comportamientos repetitivos. A pesar de su alta prevalencia, las bases fisiopatológicas del TEA no se comprenden completamente. **Objetivo:** Analizar los hallazgos de estudios de neuroimagen que evidencian cambios fisiopatológicos en el cerebro de personas con TEA. **Materiales y métodos:** Se realizó una revisión de la literatura en las bases de datos *PubMed*, *UpToDate*, *ClinicalKey*, *Google* Académico y *ScienceDirect* entre febrero y agosto de 2024. Para la organización del proceso de búsqueda y selección de los artículos se tuvieron en cuenta algunos lineamientos de la guía PRISMA. **Resultados:** Los estudios revisados evidenciaron diferencias estructurales en la amígdala, el cerebelo y otras áreas corticales, así como alteraciones en la conectividad neuronal y patrones atípicos de activación cerebral. Estas disfunciones se asocian con dificultades en la interacción social y la integración sensorial. **Conclusión:** Las técnicas de neuroimagen proporcionan información valiosa sobre las alteraciones cerebrales asociadas con el TEA y pueden contribuir al diagnóstico temprano y al desarrollo de intervenciones terapéuticas más efectivas.

Palabras clave: Trastorno del espectro autista; niños; neuroimagen. (Fuente: DeCS, Bireme).

Objetivos de desarrollo sostenible: Salud y bienestar. (Fuente: ODS, OMS).

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