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Specific Features of the Tics and Stereotypies Interview – Exploratory Study of a Semi-Structured Interview to establish the differential diagnosis between tics and stereotypies

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INTRODUCTION:

The comorbidity between stereotypies and tics is common in children and teenagers. Previous studies found that the prevalence of tics in patients with severe ASD and stereotypies could be higher than 22% for tics and 8-11% for Tourette Syndrome[1]. Studies of patients with Tourette Syndrome have also shown that 14% of patients had stereotypies, and these were often associated with ASD[1]. The differential diagnosis between tics and stereotypies can be challenging in patients with autism spectrum disorders, although it is very important for the treatment course and appropriate pharmacotherapy. The clinical features of tics and stereotypies are specific but in many cases difficult to differentiate.

Tics are defined as rapid, non-rhythmic, sudden movements and vocalizations. Tics can be simple (one group of muscles involved, such as for example eye blinking, grunting) or complex (several group muscles involved, such as those included when imitating specific actions, shouting words).[1] Stereotypies are repetitive movements typically described as patterned, seemingly driven, apparently purposeless motor behavior, postures or utterances. Most stereotypies are perceived as self-soothing but they can cause distress to children and their families, they can interfere with daily activities, and may result in self-injury.[1, 2]

To assess the clinical differences between tics and stereotypies ~~it was designed~~ a semi-structured interview was designed to clarify the specific features of tics and stereotypies and support the differential diagnosis

METHODS:

The design of the interview was supported by the most recent and up-to-date literature concerning the specific features of tics and stereotypies to establish the difference between both repetitive movements. The interview was applied to 5 patients with autism spectrum disorder, level 1, and Tourette Syndrome. All patients were diagnosed using the Autism Diagnostic Interview – Revised (ADI-R), Autism Diagnostic Observation Scale (ADOS 2) and Yale Global Tic Severity Scale (YGTSS).

Specific characteristics of tics and stereotypies[1, 2, 5, 6, 7] included in the semi-structured interview:

CHARACTERISTIC	TICS	STEREOTYPIES
Type of Movement and/or Vocalizations	Sudden, Rapid, Brief, Abrupt, Non-Rhythmic	Rhythmic, Coordinated, More Prolongued in Durantion than Tics
Site	Mainly head and neck region	Mostly limbs or the entire body
Associated Urge	Preceded by premonitory urges, subjective sensations of inner tension which are temporarily relieved by tic expression	Not preceded by premonitory urges and no relief
Supression	Can be voluntarily supressed for seconds, ~~to~~ minutes or several hours and ~~this~~ may be followed by a rebound and mounting inner tension	Not voluntarily controlled but may be reduced with distraction
Onset	Typically 5-7 years old	Typically <3 years old
Environmental Influences	Tend to reduce in active concentration situation, when relaxed or distracted Typically worsened by stress, anxiety, lack of sleep or tiredness	No specific link but percieved as self-stimulatory or self-soothing Occour both in understimulating or overstimulating environments
Course	Change in site and type of tic being replaced by another	Movements remain unchanged with a fixed pattern
Relevant Family History	Tics, OCD/OCB, ADHD	ASD, learning disability

The semi-structured interview was designed to complement the assessment of Tourette Syndrome and ASD and support the differential diagnosis between tics and stereotypies. It was applied to the parents of the 5 cases of children aged between 3 and 10 years old. In addition, all children were assessed with ADI-R, ADOS 2 and YGTSS. The results of all the instruments were qualitatively compared to observe the consistency between them.

RESULTS AND CONCLUSIONS:

The youngest child, aged 3 years old, was diagnosed with ASD Level 1 and presented stereotypies but not tics. The other 4 children were diagnosed with ASD Level 1 and Tourette Syndrome. All 4 children presented motor stereotypies and motor and vocal tics. The results of the semi-structured interview were consistent with the assessment and showed the presence of stereotypies in the youngest child and the presence of tics and stereotypies in the remaining 4 children.

The results of this exploratory study suggest that the interview can identify the presence of tics and stereotypies in patients with autism spectrum disorders and Tourette Syndrome. This suggests that the interview is sensitive to the presence of tics and stereotypies and can distinguish between both. In future studies it will be necessary to extend the number of patients as well as apply the interview to patients diagnosed only with autism spectrum disorders, tic disorders and the use of a control group eill be needed to assess the consistency and validity of the semi-structured interview. Furthermore, future investigation is required to to compare the results of the semi-structured interview with the results of the clinical observation and video analysis of the repetitive movements.

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