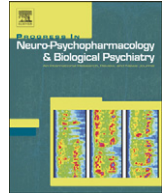




Contents lists available at ScienceDirect

Progress in Neuro-Psychopharmacology & Biological Psychiatry

journal homepage: www.elsevier.com/locate/pnp



Research article

Psychopharmacology in autism: An update

Roberto Canitano*, Valeria Scandurra

Division of Child Neuropsychiatry, University Hospital of Siena, Viale Bracci 14, 53100 Siena, Italy

ARTICLE INFO

Article history:

Received 2 March 2010
 Received in revised form 13 October 2010
 Accepted 19 October 2010
 Available online 27 October 2010

Keywords:

Autism
 Children and adolescents
 Pervasive developmental disorders
 Psychopharmacology

ABSTRACT

Autism spectrum disorders are characterized by impairment in social reciprocity, disturbances in language and communication, restricted interests and repetitive behaviors of various types, as defined by the DSM-IV. The neurobiological bases of these disorders are poorly understood, although several abnormalities have been found. Pharmacotherapy in autism spectrum disorders lacks a solid, reliable neurobiological basis and at present it is mainly directed at the so-called associated behavioral symptoms, with limited relevance to core symptoms. Atypical neuroleptics, especially risperidone, have been shown to be useful in the treatment of behavioral symptoms in autism. Recent trials with SSRIs did not show remarkable results, in spite of their promising potential role. Attention deficit and hyperactivity disorder medications may be useful for counteracting the additional features of hyperactivity and short attention span. Antiepileptics have shown promising results but there are no specific indications for them as of yet. Research is now directed at evaluating novel treatments and combined behavioral and pharmacologic treatments, since behavioral interventions are the mainstay of the early treatment of autism.

An update of currently available pharmacological treatments is provided.

© 2010 Elsevier Inc. All rights reserved.

Contents

1. Introduction	19
2. Methods	20
3. Medications	20
3.1. Atypical neuroleptics	20
3.2. Methylphenidate (MPH) and atomoxetine	22
3.3. Selective serotonin reuptake inhibitors	22
3.4. Antiepileptics (AEDs)	23
4. Discussion	24
5. Conclusions	25
Appendix A. Brief description of the main clinical and behavioral scales cited	26
A.1. Autism Diagnostic Observation Schedule (ADOS)	26
A.2. Childhood Autism Behavior Scales (CARS)	26

Abbreviations: ABC, Aberrant Behavior Checklist; ABC-C, Aberrant Behavior Checklist-Community; ABC-CV, Aberrant Behavior Checklist-Community Version; ABC-I, Aberrant Behavior Checklist-Irritability; ABC-H, Aberrant Behavior Checklist-Hyperactivity Subscale; ADHD, Attention Deficit with Hyperactivity Disorders; ADOS, Autism Diagnostic Observation Schedule; AEDs, Antiepileptic drugs; ASD, Autism spectrum disorders; CARS, Childhood Autism Rating Scale; CR, Controlled-release; CPRS-R-DSM-IV-ADHD, Conners' Parent Rating Scale-Revised-DSM-IV-ADHD; CY-BOCS, Children's Yale-Brown Obsessive Compulsive Scale; DD, Developmental disorders; CGI-I, Clinical Global Impression-Improvement; CGI-S, Clinical Global Impression-Severity; DSM-IV, Diagnostic and Statistic Manual of Mental Disorders; FDA, Food and Drug Administration; HSQ, Home Situations Questionnaire; ID, Intellectual disability; JAMES, Joint Attention Measure from the Early Social Communication Scales; MPH, Methylphenidate; PL-ADOS, Pre-Linguistic Autism Diagnostic Observation Schedule; PDD-NOS, Pervasive developmental disorder-not otherwise specified; RUPPAN, Research Units on Paediatric Psychopharmacology Autism Network; SCARED, Screen for Child Anxiety Related Emotional Disorders; SSRIs, Selective Serotonin Reuptake Inhibitors; SNAP-IV, Swanson, Nolan, and Pelham-IV.

* Corresponding author. Tel.: + 39 0577 586585; fax: + 39 0577 586150.
 E-mail addresses: r.canitano@ao-siena.toscana.it, canitano@unisi.it (R. Canitano).

A.3. Clinical Global Impression (CGI)	26
A.4. Aberrant Behavior Checklist (ABC)	26
A.5. Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS) modified for pervasive developmental disorders	26
A.6. SNAP IV rating scale	26
References	26

1. Introduction

Pervasive developmental disorders primarily regard the alteration in social development and communicative abilities associated with the presence of repetitive behaviors and restricted interests. They are also currently defined as autism spectrum disorders and herein the term autism will be used as an abbreviation to include them all. The time of onset, the characteristics that are manifested and the evolution over time are the principle factors which determine distinction into the different diagnostic categories, according to the DSM-IV (APA, 1994). They are a group of disorders defined on the basis of clinical characteristics without reference to possible etiopathogenetic factors, the great majority of which are considered idiopathic without known causes; in fact, less than 10% of cases are recognized diseases or associated genetic alterations, and the etiopathogenetic role is not yet clear. Autistic disorder has a prevalence of around 3:1000, it is more frequent in males, by a 4 to 1 ratio, and it manifests by age 3. Considering the whole autism spectrum, the prevalence including pervasive developmental disorders-not otherwise specified (PDD-NOS) has been raised to a current estimate of 6–7:1000 (Fombonne, 2009).

Currently, psychopharmacology in autism is not primarily directed at the social and communication components and for this reason it is considered relatively aspecific (West et al., 2009). The pharmacological approach is aimed mostly at problematic behaviors which are very frequent, the so-called target behavioral symptoms (McDougle et al., 2008; Posey et al., 2008) listed in the following paragraph.

Stereotypies, self-injury behaviour (SIB), and aggressive behavior are very common among individuals with autism and pervasive developmental disorder-not otherwise specified (PDD-NOS). They may cause harmful conditions and have a significant detrimental impact on the social environment in terms of appropriate care and safety measures for the child. SIB is a challenging condition that needs to be addressed as early as possible, since young age, an associated perinatal condition, and a higher degree of autism have been recognized as risk factors for SIB. A relationship has been demonstrated between the severity of self-injury and stereotypies in these children and their degree of social and communication impairment (Matson et al., 2010). In addition, co-morbid clinical conditions, such as epilepsy, are considered to be an additional risk factor for behavioral problems in autism and ictal seizure states, determining unusual repetitive behaviors with aggression, may further complicate their correct identification. The prevalence of SIB has been estimated in up to 50% of children with autism, including 14.6% with severe SIB (Baghdadli et al., 2003). When these behavioral problems are intense they require immediate care, especially when the behavior could harm the child or others and/or interferes with adaptive interaction in everyday activities. The assessment of behavioral problems poses a major challenge for clinicians and it should be thoroughly addressed in the early phases of the disorder. There are different methods for assessing behavioral problems, which include direct observation and identifying behavior through a functional assessment in an interview using a rating scale (Matson and Nebel Schwalm, 2007). SIB is currently considered to be a complex idiosyncratic learned behavior that has an underlying biological basis. A higher threshold for pain was thought to be implicated in SIB, but no evidence of abnormality has been found. Dysfunction of the opiate system in SIB has been hypothesized, but not

demonstrated, and therapeutic interventions with opioid antagonists have provided unconvincing results. The roles of dopamine and serotonin in SIB have been evaluated due to the similarities with stereotypies, but the results have been elusive (Parikh et al., 2008).

Repetitive and restricted behaviors and interests in the third domain of autism have been divided into lower and higher categories according to the different clinical features that characterize them and they refer to the complexity of activities (Richler et al., 2007; Turner, 1999). Lower order behaviors and movements include stereotypies, such as hand flapping and tip toe walking, repetitive use of objects, simple and complex tics and other ill-defined movement abnormalities.

Stereotyped movements are especially bothersome in autism and careful evaluation is recommended for possible intervention, also in unusual sensory interests and behaviors such as sniffing and licking objects. Individuals with autism engage in more frequent and severe stereotyped movements compared to age and ability matched controls, indicating some specific components that are involved in their appearance (Bodfish et al., 2000). Higher order repetitive behaviors include insistence on sameness, compulsions and ritualistic behaviors similar to obsessive compulsive disorders, that widen the perspective of comorbid and/or overlapping disorders to autism, further complicating the diagnostic process. Circumscribed interests and preoccupations also belong to this subcategory and represent a serious challenge in the clinical management of children and adolescents with autism since they may strongly interfere with daily living activities. These interests vary from preoccupations with highly unusual aspects of the environment (such as names in the telephone book, watching trains, etc.) to intense and absorbing interests in more common childhood activities, such as video and cartoons that are restlessly played over and over (Soorya et al., 2008). It is important to consider that tantrums and other anxiety reactions may result in response to any attempt in modifying these highly structured and repetitive interests that are time consuming and contribute to overall social impairment.

Hyperactivity, instability and low attention span are disturbing behaviors in children with autism, especially in preschoolers and school-aged children, which lead to little social interaction, and then to clear difficulty in understanding the stimuli that they should focus on. Attention deficit must be differentiated beyond little participation in the environment or in the very intense limited and special interests that are typical of autism, as mentioned earlier (Lecavalier, 2006). Short attention span has been observed in 50% of children with autism. Hyperactivity and remarkable instability have been observed in 49% of children according to parents and in 21% of children according to teachers and they need to be carefully addressed (Aman et al., 2008b). These are the main obstacles in setting up behavioral interventions since they strongly limit the compliance of children with autism and caretakers must make an intense effort to limit hyperactivity.

Herein, aggression, self-injury, stereotypies and tantrums are synthetically defined as maladaptive behaviors and are referred to as such throughout the text. The neurobiological basis of psychopharmacological treatment is still rather uncertain and since behavioral target symptoms are very heterogeneous they probably have different underpinnings. Thus, a thorough clinical evaluation is strongly recommended to obtain an extensive phenomenological and clinical description of the various associated manifestations and to correctly address pharmacotherapy when indicated.

Download English Version:

<https://daneshyari.com/en/article/5845448>

Download Persian Version:

<https://daneshyari.com/article/5845448>

[Daneshyari.com](https://daneshyari.com)