Diagnosis and Evaluation of Pervasive Developmental Disorders

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Accurate diagnosis and appropriate treatment of pervasive developmental disorders (PDDs), including autistic disorder, Asperger's disorder, and pervasive developmental disorder not otherwise specified, are necessary to ensure the best possible outcomes for children with these disorders. In the past, it was not uncommon for children with PDDs to wait several years from the time of parental recognition of developmental delay to the determination of the correct diagnosis and initiation of treatment. Increased awareness of PDDs and the availability of better assessment tools have improved the detection of these conditions in children. A wide variety of standardized diagnostic checklists, interviews, and observational measures are available to assist the clinician in making an accurate PDD diagnosis. A comprehensive evaluation also establishes a baseline of adaptive functioning and problematic behavior, which is essential for subsequent assessment of progress. This article discusses the differential diagnosis and evaluation of PDDs, focusing on the various assessment tools. The elements of a contemporary diagnostic evaluation and behavioral assessment are presented. The application of discretionary evaluations for special situations are also introduced.

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Pervasive developmental disorders (PDDs), including autistic disorder, Asperger's disorder, and PDD not otherwise specified (PDD-NOS), are chronic conditions characterized by pervasive and severe impairment across several domains of development beginning in early childhood.[1] Early diagnosis and treatment are vital in ensuring an optimal developmental trajectory for affected children and minimizing the impact of the condition on the family. Fortunately, a variety of tools are available to aid the clinician in assessing patients who may have a PDD. These assessment tools not only assist with making a PDD diagnosis, but they are essential for measuring intellectual functioning, adaptive skills, and the severity of associated behavioral problems. Assessment tools also facilitate the measurement of change in core features of the disorder and maladaptive behaviors over time.

PERVASIVE DEVELOPMENTAL DISORDERS

Autism, or autistic disorder, was first described by Leo Kanner[2] in 1943 when he made a distinction between patients with psychosis or mental retardation and another group of patients with a previously unclassified set of symptoms. These symptoms included a lack of social interaction, insistence on sameness, fixation on specific objects, and mutism or other communication impairment, despite signs of intellectual potential.

Autistic disorder is the prototype and most common specific type of PDD. It is defined by profound impairment in socialization, delayed and unusual communication, and repetitive behaviors and/or restricted interests. Autistic disorder has an early onset and may be evident as early as 18 months of age[3]; in order to be classified as autistic disorder, onset must occur before age 3 years.[1] The disorder is 4 times more common in boys than girls.[4] The reasons for this gender difference are unclear.

Over the years, reports from clinical samples have shown that 30% to 70% of patients with autistic disorder are also mentally retarded.[4] This wide range is likely due to differences in the source of the samples as well as sensitivity to the diagnosis. In the current era, screening methods are more sensitive, and diagnostic approaches are more systematic. The net result of these advances is that a somewhat broader phenotype is now recognized as falling under the autism diagnosis, and therefore, the rate of mental retardation tends to be lower in more recent reports. By definition, children with mental retardation also have deficits in adaptive functioning, i.e., the skills needed to carry out activities of daily living. In children with mental retardation who do not have autistic disorder, the adaptive functioning deficits, as measured on standardized tests, are consistent with their reduced IQ. For example, a child

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with an IQ in the mildly mentally retarded range is likely to show mild impairment in adaptive functioning. By contrast, children with autistic disorder show a different pattern in which their daily living skills are far below the level that their IQ would predict.[5] This discrepancy between IQ and adaptive functioning, though not a diagnostic criterion for autism, may be a focus of treatment.

Children with autism have a high risk of seizures when compared with typically developing children. Approximately 25% of children with autistic disorder have seizures.[1] The occurrence of seizures appears to be bimodal, either early in life or in the teen years. Other common features of autistic disorder include hyperactivity and serious behavioral problems. These problems are most common in school-aged children with autism and may range from mild to severe.[6] Approximately 20% to 30% of children with autism exhibit serious behavioral problems such as aggression, tantrums, and self-injury.[6] These serious behavioral problems may also be a focus for treatment.[7]

Differential Diagnosis

The 3 most common forms of PDD are autistic disorder, Asperger's disorder, and PDD-NOS, with an estimated prevalence of 40 to 60 cases per 10,000 children for all 3 disorders combined.[8] The prevalence of autistic disorder is estimated to be in the range of 10 to 20 children per 10,000.[9] Due to the relatively new addition of Asperger's disorder as a DSM-classified condition, data are limited; however, the prevalence of Asperger's disorder is estimated to be 1 to 5 per 10,000 children.[10,11] The estimate for the prevalence of PDD-NOS is 20 to 40 per 10,000 children.[8]

Children with autistic disorder exhibit impairment in all 3 domains associated with PDD—social interaction, language or communication, and repetitive behavior or restricted interests.[1] Impaired social interaction in autistic disorder may include the following: indifference or inability to share interests, enjoyment, and achievements with others; failure to read social cues in body language and facial expressions of others; and limited capacity to make social connections and relationships appropriate to age level. Language may be delayed and deviant or absent altogether. When language is present, children with autistic disorder seem unable or unwilling to initiate or sustain conversation. Speech tends to be monotone without usual emphasis to support meaning of phrases; there is also a tendency to overuse repetitive phrases. The autistic child may also use neologisms, echoing, or pronoun reversal. The domain of repetitive behavior and restricted interest may take 1 or more forms. Some children show an unusual and intense preoccupation with a topic of private interest such as fans, air conditioners, trains, or the British royalty. Other children are fixed on rituals or routines. For example, a 4-year-old with autism who expects to take a walk after breakfast may not tolerate a change in this routine that is imposed by a modest environmental demand. Other repetitive behaviors common in children with autism may included lining up toys over and over, playing the same cartoon video segment repeatedly, or motor mannerisms such as hand-flapping, rocking, or flipping objects (e.g., straws, pencils, or pieces of paper). Unlike the compulsive behavior seen in obsessive-compulsive disorder, these repetitive behaviors seem to be a source of pleasure or self-stimulation in children with autism.

Asperger's disorder, first described by Hans Asperger in 1944,[12] is defined by the presence of social impairment and repetitive behavior/restricted interest.[1] Although children with Asperger's disorder do not show delays in language development, impaired socialization may have an adverse impact on communication. Given the presence of social impairment, the cardinal feature of Asperger's disorder is the restricted interest. Children with Asperger's may accumulate an extraordinarily detailed set of information about a given topic. Conversations with age-mates may focus on this topic to the exclusion of any other topic. This tendency to over-focus on a topic of private interest can lead to social isolation, as peers may back away from further interaction. Despite the accumulation of facts about a certain topic, children with Asperger's disorder may have only a limited understanding beyond the facts. For example, a child of 10 years may know the names of several British kings and queens but know little about England.

The diagnosis of PDD-NOS is appropriate when a patient exhibits impairments in socialization but does not meet criteria for autistic disorder or Asperger's disorder. For example, in addition to social impairment, a child with PDD-NOS may show mild-to-moderate language delay and restricted interests. This child would not fulfill criteria for autistic disorder because of the milder language delay and would not meet criteria for Asperger's disorder because there is evidence of some language delay.[1]

Importance of Early Diagnosis

Several lines of evidence and accumulated clinical experience indicate that early diagnosis and intervention can improve long-term outcomes for most children with PDDs. Although the empirical support for this conviction is not based on scientifically rigorous evidence, consensus in the field is unambiguous. In addition, early diagnosis allows the parents and family to learn about the PDD and begin to deal with the implications of the disorder for the child and the family. Nevertheless, PDDs are often unrecognized and undiagnosed, sometimes in spite of the efforts of parents and family members to discover the cause of abnormal behaviors in a child. In a recent survey[13] of more than 1200 patients' families, most children with PDDs were not diagnosed until the age of 6 years. Most of these parents reported that they suspected abnormalities in their children's development as early as 18 months of age.

Indeed, many parents sought medical advice by the time their children were 2 years old. Upon seeking medical assistance, 10% were told to return if the problems persisted or that their children "would grow out of it"; 80% were referred to other professionals. Less than 10% were diagnosed with a PDD at the first clinical consultation. Of those referred to other professionals, less than half were given a formal diagnosis. Many were told "not to worry" or were referred to a third professional. Many parents reported having difficulty securing referrals or had to pay privately. According to many families, school systems and other parents provided much more assistance than the medical community.

A clinician's hesitancy to make a PDD diagnosis can arise from uncertainty about the diagnostic criteria, concern about making an incorrect diagnosis, or an understandable desire to paint a more optimistic picture. Such misdiagnoses, however, may be detrimental to the child and family due to the delays in mustering treatment efforts. Moreover, recent advances in the development of assessment tools can assist with making accurate diagnoses.

DIAGNOSIS AND EVALUATION

In addition to general medical evaluation, there are 3 important aspects in the assessment of a child suspected of having a PDD: categorical diagnosis, dimensional assessment, and evaluation of the individual patient's symptoms. Each of these 3 areas is essential for the diagnosis and treatment planning for a child with a PDD. Several available tools can be used to accomplish this assessment (Table 1).[14–27] Categorical diagnosis refers to a determination of the presence or absence of a PDD based on criteria from the DSM-IV.[1] The dimensional evaluation refers to a range of constructs including intellectual functioning, language, adaptive functioning, behavioral problems, and prosocial behavior. Individualized symptom assessment offers the opportunity for parents to nominate the 1 or 2 problems that cause the most disruption, which may, in turn, become the focus of intervention.

Categorical Diagnosis

To assist with a PDD diagnosis, the clinician can make use of informant-based measures, structured diagnostic interviews, observational measures, and symptom checklists. Various tools may be used to complete the categorical diagnosis.

Autism Behavior Checklist. An informant-based measure, the Autism Behavior Checklist[14] is a 57-item checklist that targets several domains that are relevant to the diagnosis of autism. The checklist may be completed by a parent, teacher, or other caregiver. As with any informant-based instrument, it is vulnerable to misinterpretation by the parent or teacher completing the form. Thus, the Autism Behavior Checklist cannot offer diagnostic certainty when used alone. Developed in 1980, it is not precisely aligned with DSM-IV criteria. Nonetheless, it can provide information about developmental disabilities that are associated with autism spectrum disorders.[28]

Table 1. Types of Assessments Used for Diagnosis of Pervasive Development Disorders

- Categorical diagnosis
  - Informant-based measures
    - Autism Behavior Checklist[14]
  - Structured diagnostic interview
    - Autism Diagnostic Interview-Revised[15]
  - Observational measures
    - Autism Diagnostic Observation Schedule[16]
    - Childhood Autism Rating Scale[17]
  - DSM-IV psychiatric symptom inventories
    - Child Symptom Inventory-4[18]
    - Early Childhood Inventory-4[19]
- Dimensional assessment
  - Performance measures
    - IQ tests
    - Language tests
  - Informant-based measures
    - Aberrant Behavior Checklist[20]
    - Developmental Behavior Checklist[21]
    - Matson Evaluation of Social Skills for Individuals With Severe Retardation[22]
    - Social Responsiveness Scale[23]
  - Semistructured interviews
    - Vineland Adaptive Behavior Scales[24]
    - Children's Yale-Brown Obsessive-Compulsive Scale–Pervasive Developmental Disorders (references 25 and 26 and L.S.; C. J. McDougle, M.D.; S. W. Williams, Ph.D.; et al., manuscript submitted)
- Individual patient evaluation
  - Parent-nominated target symptoms[27]

Psychiatric Symptom Inventories. The Child Symptom Inventory-4[18] is a checklist that screens for DSM-IV disorders, including PDDs, in children 5 to 12 years of age. The Early Childhood Inventory-4[19] is used for children from ages 3 to 5 years. Both inventories have a parent checklist and a teacher checklist, and both inventories have demonstrated reliability and validity in community and clinical samples.[18,19,29–31] The advantage of these inventories over the Autism Behavior Checklist is that they are entirely based on the DSM-IV and offer information about other diagnostic categories beyond PDD.

Autism Diagnostic Interview-Revised. Based on the original Autism Diagnostic Interview, the Autism Diagnostic Interview-Revised (ADI-R)[15] is a comprehensive, structured diagnostic interview conducted by a trained clinical interviewer. The interviewer asks the parent or caregiver 92 questions about the patient's language and communication, reciprocal social interactions, and restricted, repetitive, or stereotyped behaviors and interests. The ADI-R covers 8 content areas[32]: an overview of the subject's behavior; family, education, and medical background; early development and developmental milestones; language acquisition and loss of language or other skills; current language and communication functioning; social development and play; interests and behavior; and clini-

cally relevant behaviors such as self-injury, aggression, and epileptic features. The ADI-R, perhaps the most commonly used diagnostic interview, is reliable and valid.[15] It has a scoring algorithm for autistic disorder, but there is no scoring algorithm for PDD-NOS or Asperger's disorder. One of the disadvantages of the ADI-R is that its interviewers require a fair amount of training; it also has a lengthy administration time (at least 120 minutes). Finally, the ADI-R has the possibility of false positives and false negatives compared with the opinion of an expert clinician.[15] The ADI-R is now commonplace in research but is not as commonly used in clinical practice.

Autism Diagnostic Observation Schedule. Using a series of structured and semistructured scenarios for interaction, the Autism Diagnostic Observational Schedule (ADOS)[16] allows the interviewer to assess autism spectrum behavior by observing it first-hand. The interviewer, who needs to have specific training and experience with autistic behaviors, interacts with the subject according to a standardized protocol across several modules including reciprocal social interaction, communication and language, and stereotyped behaviors. The presentation of the modules varies according to the child's verbal ability. The ADOS takes about 40 minutes to complete. It has well established reliability and validity.[16] It has been proposed as a change measure but, thus far, has not been successfully used for that purpose.

Childhood Autism Rating Scale. The Childhood Autism Rating Scale (CARS)[17] is an observational assessment used by trained professionals to identify children with autistic disorder and distinguish between autistic disorder and other developmental disabilities. The 15-item scale is also able to distinguish mild to moderate autism from severe autism. The most widely used rating scale for autistic behavior,[28] the CARS is reliable and valid.[17] In addition to the observational assessment, the CARS makes use of available data from parents and from records. The disadvantage of the CARS is that it includes a relatively narrow field of inquiry.[17] The coding system is not highly developed, although there is a scoring cutoff for diagnosing and evaluating severity of autistic disorder. Scores range from 15 to 60. A score of 30 to 36 suggests a diagnosis of mild-to-moderate autistic disorder. A score above 36 suggests a diagnosis of moderate-to-severe autism.[17] Given that its primary purpose is to make a diagnosis of autism, it is unlikely to serve well as a change measure.

Dimensional Assessment

Dimensional assessments focus on specific areas of functioning such as IQ, language testing, adaptive functioning, social interaction, and behavioral problems. These evaluations may include performance-based measures, semistructured interviews, or informant-based measures. A review of IQ and language tests is beyond the scope of this article.

Vineland Adaptive Behavior Scales. The Vineland Adaptive Behavior Scales[24] is a set of semistructured interviews designed to measure functional ability in everyday life. Parents are asked to review the child's actual performance across 3 domains: communication, daily living, and socialization. The interview focuses on what the child actually does on daily basis, not what the child can do in optimal circumstances. A major strength of the Vineland is that it has national norms for age and gender.[5] [The normative data have been standardized such that a score of 100 is the mean with a standard deviation of ± 15.] Thus, as with IQ, a child that falls more than 2 standard deviation units below the mean is considered in the retarded range of adaptive function.[24] As suggested by the previous discussion, children who do not have a PDD and do score in the mentally retarded range on a valid IQ test usually score in a similar range on the Vineland. Children with a PDD, however, often have Vineland scores that are 2 standard deviations below their measured IQ.[5] A drawback of the Vineland is that it may take 20 to 45 minutes to complete. On the other hand, it provides important baseline information and can be used to evaluate change over intermediate time periods (e.g., 6 months) (S. W. Williams, Ph.D.; L.S.; B. Vitiello, M.D.; et al., manuscript submitted).

Aberrant Behavior Checklist. Created to assess problem behaviors in children and adults with developmental disabilities, the Aberrant Behavior Checklist[20] is a 58-item informant-based scale that may be completed by any caregiver with knowledge of the individual. The items are divided into 5 subscales—irritability, social withdrawal, stereotypies, hyperactivity, and inappropriate speech. The Aberrant Behavior Checklist has normative data for developmental disabilities,[6] is reliable and valid,[33] and is sensitive to change.[7,34]

Developmental Behavior Checklist. The Developmental Behavior Checklist (DBC)[21] is a 96-item checklist, completed by a parent or primary caregiver, designed to assess emotional and behavioral problems in children and adolescents with developmental disabilities. The 5 behavioral domains assessed by this scale include disruptive/antisocial behavior, self-absorbed behavior, disturbed communication, anxiety, and social relatedness. The DBC has normative data for mental retardation and PDDs, and it is reliable and valid.[21] The sensitivity to change of the DBC has not been determined.

Matson Evaluation of Social Skills for Individuals With Severe Retardation. The Matson Evaluation of Social Skills for Individuals With Severe Retardation (MESSIER)[22] is an informant-based checklist for children and adults with developmental disabilities. The 85-item rating scale assesses behaviors across 6 categories: positive verbal and positive nonverbal, negative verbal and negative nonverbal, and general positive and general negative. The MESSIER has reliability and validity,[35,36] although normative data are not extensive. One strength of the MESSIER

is that it contains a 23-item scale on prosocial behaviors. This scale may be especially informative during the assessment phase and may be sensitive to change.

Social Responsiveness Scale. Formerly known as the Social Reciprocity Scale, the Social Responsiveness Scale (SRS)[23] is a quantitative measure of the social disability in children and adults with PDDs. The SRS is completed by parents or teachers, and it is reliable and valid.[37]

Children's Yale-Brown Obsessive-Compulsive Scale–Pervasive Developmental Disorders. The Children's Yale-Brown Obsessive-Compulsive Scale (CYBOCS)[25] has been adapted to measure the severity of repetitive behavior in children with PDDs (reference 26 and L.S.; C. J. McDougle, M.D.; S. W. Williams, Ph.D.; et al., manuscript submitted). This semistructured parent-child interview includes a checklist of compulsive behaviors and rates severity according to 5 measures: time spent performing the behavior, interference caused by the behavior in daily life, distress due to the performance or the blocking of the repetitive behavior, the extent to which the child can resist performing the behavior, and the child's degree of control over the behavior. The CYBOCS-PDD is reliable, valid, and sensitive to change (reference 26 and L.S.; C. J. McDougle, M.D.; S. W. Williams, Ph.D.; et al., manuscript submitted).

Individual Patient Evaluation

A complete diagnostic evaluation of a child with a PDD should also include an assessment of the parents' chief complaint. In some cases, the chief complaint may be a core feature of autism such as social isolation or repetitive behavior. In other cases, parents may describe serious behavioral problems such as aggression, tantrums, or self-injury that are not core features of the PDD. In their description of these behaviors, parents may note that the presence of such severe behavioral problems poses a significant barrier to the acquisition of new adaptive skills as well as impeding the regular performance of already acquired skills. Simple, but clear, characterization of these chief complaints can contribute to the assessment of change over time.[27]

The baseline evaluation of the target symptom should include a simple statement of the problem and an estimation of the frequency, intensity, and impact of the behavior. The problem statement may be a direct quotation from the parent or a label agreed upon by the parent and the clinician. For episodic behaviors, such as aggression, frequency in the form of number of occurrences per day or week is an essential for the characterization. For more pervasive behavioral patterns, such as hyperactivity, the percentage of time spent per day (e.g., half the time, nearly all the time, etc.) may be more useful. Symptom intensity can be captured by asking about the appearance of the behavior, the settings in which it occurs, and the patient's state during the behavior (e.g., angry, frustrated, sad, uncontrollable). Finally, the parent can be asked about the impact of the behavior on daily life for the child and family. For example, the parent may quickly identify explosive outbursts as the chief complaint. The discussion may lead to the following characterization: "Episodes occur up to 8 times per day, lasting 10 to 30 minutes and are accompanied by screaming, slamming doors, throwing objects without looking. They occur mostly at home but have also happened at school. There has been property destruction; parents avoid setting limits as a way to avert these episodes." This brief characterization can be read back to the parent at follow-up visits, at which point specific comparative comments can be elicited and documented.[27]

DIAGNOSTIC ASSESSMENT: OPTIMAL VERSUS MINIMAL

Diagnosis and evaluation of PDDs must involve gathering a wide range of historical and current data on development, adaptive functioning, and behavioral problems. The use of standardized assessment tools can assist in making the diagnosis, measuring adaptive functioning, and characterizing associated behavioral problems. Table 2 provides specific suggestions for an optimal versus a less complete, but acceptable, diagnostic assessment.[3,9] The minimally acceptable evaluation makes use of previously collected data—if available and if validly collected.

The assessment of a child suspected of having a PDD should always include the child's developmental history (focusing on developmental milestones and delays), family history (e.g., family history of autism, mental retardation, fragile X syndrome, and tuberous sclerosis), and the child's medical history (e.g., signs of deterioration, seizure activity, brain injury). The clinician should either conduct or have evidence of a recent physical examination of the child. A lead screening should be conducted for children with mental retardation.

During a complete assessment of a child suspected of having a PDD, a clinician should use diagnostic tools for PDD; incorporate measures of intellectual functioning, language development, adaptive skills, and behavioral problems; and consider medical conditions that may underlie or complicate the PDD.[3,9] The ADI-R and the ADOS represent the best combination of diagnostic tools. The selection of specific IQ tests (which depends on chronological age, mental age, linguistic competence, and level of cooperation) should be made in consultation with an experienced psychologist, by whom the testing is usually conducted. Similarly, the selection and administration of language tests should be carried out by a speech pathologist. The Vineland requires some training but can be administered by a wide range of mental health clinicians. The screening of audiology and tympanometry can be done by primary care or mental health clinicians, if the equipment is available. Comprehensive hearing tests should be pro-

Table 2. Protocols for Evaluation of Pervasive Development Disorders[a]

Optimal diagnostic evaluation
Autism Diagnostic Interview-Revised (ADI-R)
Autism Diagnostic Observation Schedule (ADOS)
IQ test
Vineland Adaptive Behavior Scales
Language and hearing testing
Aberrant Behavior Checklist or Developmental Behavior Checklist (DBC)
DSM-IV psychiatric symptom inventory
Children's Yale-Brown Obsessive-Compulsive Scale–Pervasive Developmental Disorders (CYBOCS-PDD)
Developmental, family, and medical histories
Evidence of a recent physical exam
Lead screening (if mental retardation is present)
Genetic testing
Minimal diagnostic evaluation
Childhood Autism Rating Scale (CARS)
IQ test
Vineland Adaptive Behavior Scales
Language and hearing testing (or evidence of recent testing)
Aberrant Behavior Checklist or Developmental Behavior Checklist
DSM-IV psychiatric symptom inventory
Developmental, family, and medical histories
Evidence of a recent physical exam
Lead screening (if mental retardation is present)
Discretionary testing
Karyotype, for children with mental retardation, family history of fragile X syndrome, or dysmorphic features
Electroencephalogram (EEG), for children with seizures
Metabolic testing, for children with neurological deficits or regression
Magnetic resonance imaging (MRI), for children with neurological deficits of regression
Occupational therapy evaluation, for children with hypotonia or marked poor coordination

[a]Based on Filipek et al.[3,9]

vided by an audiologist with experience in testing young children. The Aberrant Behavior Checklist or the DBC can be used to assess behavior, and a DSM-IV psychiatric symptom inventory (such as the Early Childhood Inventory) can assist with the diagnosis of a PDD as well as other DSM-IV symptom complexes.

If time or resources do not allow for the optimal diagnostic evaluation, a minimal diagnostic evaluation (Table 2) could include administration of the CARS, the Vineland, the Aberrant Behavior Checklist, and the age-appropriate DSM-IV psychiatric symptom inventory. In lieu of conducting tests of intellectual and language functioning and auditory assessment, the clinician can document evidence of recent IQ, language, and hearing testing, if available.

Discretionary Testing

Discretionary testing (Table 2) may be necessary in selected cases. For example, testing for fragile X syndrome or a karyotype may be appropriate for children with dysmorphic features or mental retardation or in cases with a family history of fragile X syndrome. Children with a history of seizures should have an electroencephalogram. Metabolic testing and magnetic resonance imaging may be necessary if a child shows significant regression in functioning. Referral to an occupational therapist should be considered in cases of hypotonia or markedly poor coordination.

ASSESSING SEVERITY AND CHANGE THROUGHOUT TREATMENT

The effectiveness of PDD treatment also involves the measurement of change in symptom and condition severity. This assessment allows clinicians to determine if a treatment intervention should be continued, stopped, or altered. In addition to the measures described above (e.g., Aberrant Behavior Checklist, CYBOCS-PDD), another means of assessing change is the use of global measures such as the Clinical Global Impressions-Severity of Illness scale (CGI-S)[38] and the CGI-Improvement scale (CGI-I).[38] A measure such as the CGI-I can be used in conjunction with the parent-nominated target symptom to rate change.[27] If a complete description and measurement of the target symptom was recorded at baseline, changes in the severity of the target symptom may support evidence of improvement.

CONCLUSION

Early diagnosis and initiation of appropriate treatment of autistic disorder and other PDDs are likely to improve long-term outcomes. The use of assessment tools can improve diagnostic precision, characterize strengths and weaknesses in intellectual functioning and language and adaptive skills, and establish the baseline of behavioral problems. Thus, the evaluation of a child with a PDD should include categorical diagnosis and assessment of IQ, language functioning, and adaptive skills, as well as assessment of behavioral problems. Assessment of the parent's chief complaint may also help to target intervention and monitor change over time.

Disclosure of off-label usage: The author has determined that, to the best of his knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration-approved labeling has been presented in this article.

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