

AUTISM SPECTRUM DISORDERS

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What is Autism?

Autism spectrum disorders are a group of biologically based neurodevelopmental disorders characterized by patterns of delay and deviance in development of social, communicative and cognitive skills which arise in first years of life. Although frequently associated with mental retardation these conditions are distinctive in their course and treatment.

EPEDEMIOLOGY

The prevalence of ASD in United states and other countries has increased since 1970s and particularly since 1990s. Data from Autism and Developmental Disabilities Monitoring Network in US indicate an ASD prevalence of 9 per 1000 at age eight years for year 2006. Systematic reviews of epidemiologic studies have found evidence that changes in case definition and increased awareness account for increase in prevalence of autism.

EPEDEMIOLGY(CONTD)

Autism is approximately 3 to 4 times more common in males than in females. Except for Rett's disorder(which is observed unequivocally only in females), male predominance has been noted in other PDDs. About 50% of cases exhibit severe or profound MR, 30 % exhibit mild to moderate MR and 20 % have IQ in normal range. It is now clear that autism is observed at all socioeconomic levels.

ETIOLOGY

Etiology of ASD is incompletely understood.

Genetic and environmental factors contribute.

Multiple genes on different chromosomes like X chromosome, Chromosomes 15, 16 and 17 have been implicated. Toxic exposures, teratogens, perinatal insults, and prenatal infections may contribute.

Accelerated head growth during infancy has been reported in Autism. Functional MRI indicates that individuals with ASD use different pattern of connectivity, cognitive strategies and brain areas to process information.

CORE CLINICAL FEATURES

The diagnosis of Autism requires disturbance in each of three domains .

1. Social relatedness.
2. Communication and play
3. Restricted interests and activities.

Onset of autism is by age 3. However some behaviors like resistance to change, restricted interests, and stereotype movements may develop after age 3.

GROUP OF ASD

Five main autistic disorders:

Autistic disorder.

Rett's disorder.

Childhood disintegrative disorder.

Asperger disorder.

PDD NOS.

ASSOCIATED FEATURES

Sensory integration dysfunction.

Over arousal.

Executive dysfunction- difficulty seeing big picture.

Poor adaptive function for routine activities.

Academic problems like reading and writing skills.

Poor motor skills.

Impulsivity.

Concrete thinking.

Low frustration tolerance.

Difficult temperament.

EARLY DEVELOPMENTAL DELAYS(RED FLAGS)

By about age 2 or 3:

Child does not like company of other children.

Not making eye contact.

Does not follow simple instruction.

Has no or minimal language.

Does not understand common words.

Does not like close contact.

Can not combine two words.

Does not like simple social games.

No imaginative play.

Difficult temperament along with other features.

DIFFERENTIAL DIAGNOSIS

Global developmental delay.

Developmental language disorder.

Language based learning disorder.

Hearing impairment.

Landau-Kleffner syndrome.

Reactive attachment disorder.

OCD

Anxiety disorder.

Tuberous sclerosis.

Fragile X syndrome.

ASSESSMENT

History from caregivers including developmental history, behavior, regression, parental concerns, family history of developmental disorders.

Physical examination including Head circumference, Skin exam for macules, dysmorphic features, gait and muscle tone.

Hearing and vision testing.

Speech and language assessment.

Intelligence testing.

Adaptive tests.

ASSESSMENT(CONTND.)

Achievement tests.

Neuropsychological tests if needed.

Occupational therapy evaluation.

Additional evaluation including testing for tuberous sclerosis, fragile x syndrome, Angel man syndrome based on history and clinical presentation. It includes genetic testing, metabolic screening, neuroimaging and EEG.

MANAGEMENT

Educational and behavior interventions:

Smaller setting with fewer children.

Managing over arousal by systematic desensitization by occupational therapy.

Reducing noise level in the classroom.

Teaching strategies to identify emotions.

Providing environment that is structured, organized and organizing including task lists, visual instructional material.

Speech and language therapy including functional communication training for nonverbal children.

MANAGEMENT(CONTD)

Vocational and prevocational training for adolescents with autism.

Behavior modification programs and applied behavior analysis.

ABA helps to identify triggers of behaviors to develop treatment plan. Four main triggers are Attention, Tangibles, Escape or Sensory issues.

Social skills training.

Adaptive or life skills training.

Intensive academic support in reading, writing. Studies shows improved outcome if included in SLT.

Early and sustained interventions are indicated.

MANAGEMENT(CONTD)

Family interventions:

including support, education, to enhance home behavior interventions, respite care.

Residential placements may be needed.

DDD may provide some services.

Psychotherapy for higher functioning individuals including Asperger syndrome.

Pharmacotherapy:

May be needed to enhance benefit from other interventions.

To treat comorbid disorders.

May include SSRIs, Neuroleptics, Stimulants, Adrenergic agonists or anatgonists.

HOW PEOPLE WITH AUTISM THINK?

Quotes by Temple Grandin who had autism and wrote a number of books.

“Now let me explain how the language part of my brain and thinking in pictures part of my brain interact. My mind works just like an internet web browser. My mind looks for picture memories that are associated with words”

‘In my scientific work ,I convert numerical differences to percentage differences which can be visualized on a pie chart”

‘People with Autism and animals as well, pay attention to details. As I described in ‘Thinking in pictures" thinking goes from specific to general”

COMORBID PSYCHIATRIC DISORDERS.

Mental retardation. Symptoms of autism increase with increased MR.

Hyperactivity, attentional problems may respond to stimulants but need to be carefully monitored. Structural setting may help. Anxiety needs to be treated if I/H is due to anxiety. Atomoxetine may be helpful.

Anxiety disorders including OCD can be managed with CBT and medications. SSRIs are first line of meds.

Disruptive behaviors can be managed by behavior plans and medications like neuroleptics are needed sometime for behavior management. ABA is important component of treatment.

COMORBID DISORDERS(CONTD.)

Depression is more co morbid in children and adolescent with Asperger disorder. Therapy and antidepressants are indicated.

Other mood disorders like bipolar disorders need intensive management.

Schizophrenia rate in Autism seem to be higher than expected.

Unusual motor mannerisms and stereotypies are also common in autism.