



AUTISM IN CHILDREN

AUTISM



Autism is a developmental disorder that appears in the first 3 years of life, and affects the brain's normal development of social and communication skills.

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AUTISM



- Leo Kanner, a child psychiatrist, in 1943 first coined the term “autism”.
- 11 children described who demonstrated : a profound lack of social engagement, failed to use language to communicate, had an obsessive need for sameness.
- But, faulty postulation that autism occurs due to difficulties in the parent-child relationship.



AUTISM: NEURODEVELOPMENTAL DISORDER

- Autism is now recognized as a neurodevelopmental disorder & neurobehavioral' disorder.
- Autism occurs due to underlying disorder of brain development.

WHAT IS AUTISM?



Autism is a complex **neurodevelopmental disorder** characterized by:

- qualitative impairments in social interaction,
- qualitative impairments in communication, and
- restricted, repetitive, stereotyped patterns of behavior, interests and activities.

SOME FACTS ABOUT AUTISM



- Autism is NOT a single disorder.
- Autistic symptoms occur along a wide spectrum.
- Sensory hypo sensitivities or hyper sensitivities to the environment often noted.
- Symptoms may vary in the same autistic child and change over time.
- No specific biological markers.

DIAGNOSIS OF AUTISM



- Diagnosis based entirely on clinical findings.
- Ascertain whether the child's specific behaviors meet the Diagnostic and Statistical Manual of Mental Disorders-V-Revised (DSM-V) criteria.
- Observe child in several settings as symptoms may unfold over time.

DSM-5



- Diagnostic and Statistical Manual of Mental Disorders, Edition (DSM-5) revisions
 - Autism spectrum disorders
 - Includes autism, Asperger syndrome, PDD-NOS, and child disintegrative disorder (CDD)
 - Concentrates on required features
 - Social/communication deficits
 - Restricted, repetitive patterns of behavior, interests, activities
 - Addition of sensory criteria
 - Increases specificity while maintaining sensitivity
 - Important to distinguish spectrum from non-spectrum developmental disabilities
 - Improves stability of diagnosis

DSM-5 CRITERIA: SOCIAL COMMUNICATION



- Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays, manifested by all of the following:
 - Deficits in social-emotional reciprocity
 - Deficits in nonverbal communicative behaviors
 - Deficits in developing and maintaining relationships appropriate to the developmental level

DSM-5 CRITERIA: RESTRICTED/REPETITIVE BEHAVIORS



- Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least 2 of the following:
 - Stereotyped or repetitive speech, motor movements, or use of objects
 - Excessive adherence to routines
 - Highly restricted, fixated interests that are abnormal in intensity or focus
 - Hyper- or hypo-reactivity to sensory input or unusual sensory interests

DSM-V CRITERIA



- Symptoms must be present in early childhood.
- Symptoms together limit and impair everyday functioning.



DSM-IV-R CRITERIA FOR DIAGNOSING AUTISM

A. Impairment in social interactions (4 criteria)

1. Lacks eye-to-eye gaze, facial expression, gestures while interacting
2. Fails to develop peer relationships
3. Does not share interests with others (e.g., no bringing, or pointing out objects)
4. Lacks social or emotional reciprocity

DSM-IV-R CRITERIA FOR DIAGNOSING AUTISM

B. Impairment in communication (4 criteria)

1. Has delayed development of speech
2. Does not initiate or sustain conversation
3. Has stereotyped and repetitive language or idiosyncratic language
4. Lacks make-believe play or social imitative play

DSM-IV-R CRITERIA FOR DIAGNOSING AUTISM

C. Repetitive behaviors and stereotyped behavior patterns (4 criteria)

1. Has stereotyped, restricted patterns of interest, abnormal in intensity or focus
2. Has inflexible adherence to specific, non-functional routines or rituals
3. Has stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping)
4. Has persistent preoccupation with parts of objects

PREVALENCE OF AUTISM



- 7.1 per 10,000 in individuals under 18 years of age (western countries).
- Boys are affected more often than girls.
- Average male: female ratio is 3.8:1.
- Current higher prevalence rates reflect improved identification of autism.



PREVALENCE OF AUTISM IN INDIA

- No prevalence data available from India.
- Diagnosis frequently missed.
- Lack of awareness and knowledge about the disorder among health professionals.
- But recent reports from New Delhi and Chandigarh state that autism is NOT uncommon in India.

WHAT CAUSES AUTISM?



- No one single unified theory can explain etiology of autism.
- Structural MRI brain studies have detected, though not consistently, increased volume of the total brain and abnormalities in the cerebellum, frontal lobe, and limbic system (amygdala and hippocampus) in young children with autism.

HOW EARLY CAN AUTISM BE DIAGNOSED?

- In first year of life: no clear discriminating features.
- However, home videos of infants later diagnosed to have autism have detected four autistic behaviors viz. not pointing, not showing objects, not looking at others, and failing to orient to name being called.
- Abnormally accelerated rate of growth in head size between 6-14 months of age: an early warning signal of risk for autism.



EARLY DIAGNOSIS IS IMPORTANT

- Careful attention to parents' concerns and specific inquiry into how child interacts, communicates, and plays helps detect autism early.
- Autism can be reliably diagnosed at between 2-3 yrs. of age .
- Intervention therapy when initiated at an early age can improve outcome.
- Need to give information regarding recurrence risks to parents.

ALERTING SIGNALS IN CHILDREN 2-3 YRS. OF AGE

Social impairments

1. Does not imitate actions (e.g., clapping).
2. Does not show toys to other people.
3. Lacks interest in other children (e.g., does not smile at or touch face of another child).
4. Is indifferent to other people's happiness or distress (e.g., not distressed when mother cries).
5. Prefers to be alone (does not want cuddling or act cuddly).
6. Has little or no eye contact.
7. Prefers solitary play activities.
8. Has odd relationships with adults (too friendly or ignores).
9. Develops loss of any social skills.

ALERTING SIGNALS IN CHILDREN 2-3 YRS. OF AGE



Communication impairments

1. Does not babble, point by 12 months.
2. Does not speak single words by 18 months.
3. Does not speak two word spontaneous (non-echoed) phrases by 24 months.
4. Has poor response to name (may seem to be deaf).
5. Has delayed language development, especially comprehension.
6. Has unusual use of language (e.g., repeats words or phrases in place of normal responsive language).
7. Has deficient non-verbal communication (e.g., no gestures with hands while talking).
8. Does not participate in shared imaginary games (e.g. cannot play ring-a-ring roses or other nursery games).
9. Develops loss of any language skills.

ALERTING SIGNALS IN CHILDREN 2-3 YRS. OF AGE

Repetitive and stereotyped behavior patterns

1. Resists changes in routine (e.g., rigid and limited dietary habits)
2. Inappropriate attachment to objects (e.g., carries teddy bear all day long)
3. Unable to cope with change, especially in unstructured setting (e.g., uncontrollable crying when taken first time to beach)
4. Has repeated motor mannerisms (e.g., hand flapping, rocking)
5. Plays oddly and repetitively with toys (e.g., lines up objects, spins objects)
6. Turns light switches on and off, regardless of scolding
7. Is over-sensitive to sound or touch (e.g., frequently wakes up at night)
8. Bites, hits, aggressive to peers
9. Laughs, cries or shows distress for reasons not apparent to others

ALERTING SIGNALS IN PRIMARY SCHOOL AGE CHILDREN

Social impairments

1. Does not join in with the play of other children (e.g., cannot play football)
2. Makes inappropriate disruptive attempts at joint play (e.g., tries to play football but cannot understand its rules)
2. Lacks classroom "norms" (e.g., does not cooperate in classroom activities)
3. Does not follow current trends (e.g., with regard to other children's interests)
3. Gets easily overwhelmed by social stimulation (e.g. crowd phobia)
4. Fails to relate normally to adults (either too intense or no relationship)



ALERTING SIGNALS IN PRIMARY SCHOOL AGE CHILDREN

Communication impairments

1. Speaks in a monotonous tone, or with abnormal modulation of volume
2. Displays persistent echolalia
3. Refers to self as "you," "she," or "he"
4. Has unusual vocabulary for child's age or social group (e.g., knows names of all world currencies, capital cities of all countries)
5. Has limited use of language for communication (may be mistaken as being deaf mute)
6. Has tendency to talk freely but only about specific topics (e.g., car models)

ALERTING SIGNALS IN PRIMARY SCHOOL AGE CHILDREN



Repetitive and stereotyped behavior patterns

1. Shows extreme reactions to invasion of personal space (e.g. temper tantrums)
2. Shows extreme resistance to being "hurried"
3. Wants to watch the same educational video repeatedly
4. Has intense interest in a particular topic (e.g., train timetables, dinosaurs)
5. Is unable to cope with change or in unstructured situations (e.g., school picnic)
6. Has unusual responses to sensory visual / olfactory stimuli (e.g. starts crying in sunlight)

AUTISM SCREENING TOOLS



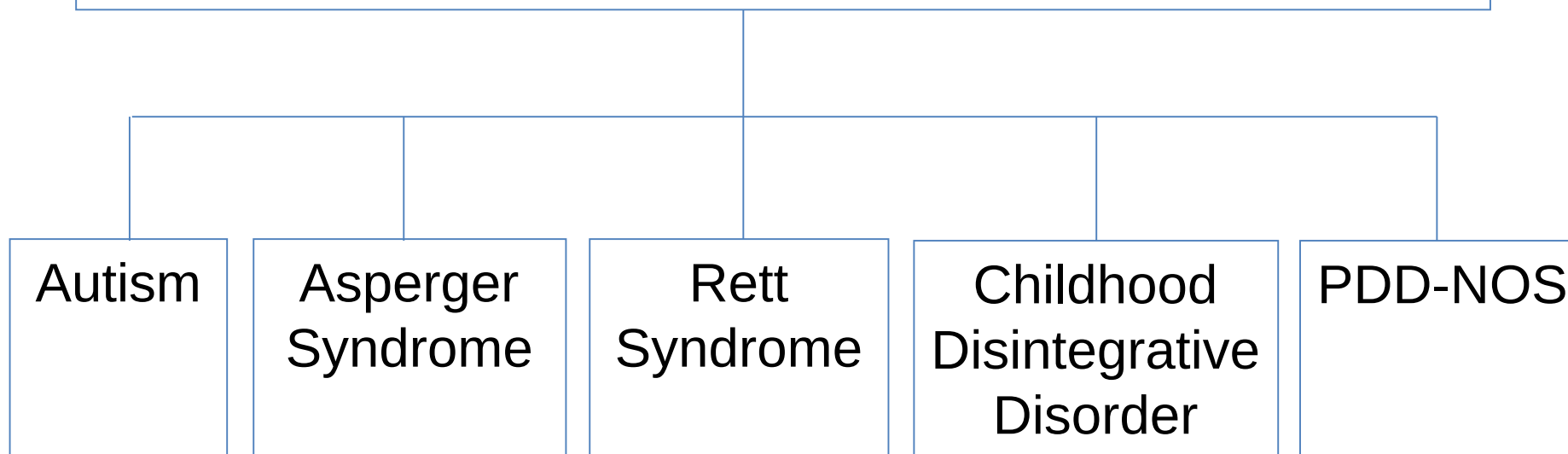
- M-CHAT (Modified Checklist for Autism in Toddlers)
- PDDBI (Pervasive Developmental Disorders Behavior Inventory)
- ADI-R (Autism Diagnostic Interview Revised)
- ADOS (Autism Diagnostic Observation Schedule)
- CARS (Childhood Autism Rating Scale)
- Trivandrum Autism Behavioral Checklist

CO-MORBID CONDITIONS



- 75% have associated mental retardation.
- 7-14% have epilepsy.
- Frequently have serious behavioral disturbances, such as self-injurious behavior, aggression, hyperactivity, and temper tantrums.
- In < 10%, autism occurs in conjunction with known medical disorders: tuberous sclerosis, fragile X syndrome, phenylketonuria, and congenital rubella syndrome.

PERVASIVE DEVELOPMENTAL DISORDERS



MANAGEMENT OF AUTISM



- A multidisciplinary team of professionals trained and specialized in autism is necessary.
- The team should include:
 - Developmental pediatrician,
 - Child psychiatrist,
 - Occupational (behavioral) therapist,
 - Speech therapist,
 - Psychologist,
 - Specialist teacher and
 - Social worker.

INTERVENTION STRATEGIES FOR AUTISM



- Pharmacotherapy
- Sensory Integration Therapy
- Auditory Integration Therapy
- Diet Therapy
- Mega Vitamin Therapy
- Lovaas Behavioral Modification
- Applied Behavior Analysis

INITIAL ASSESSMENT



- Thorough medical examination: detailed medical and developmental history, meticulous physical examination to identify neurocutaneous markers for tuberous sclerosis (including Wood's light examination), and dysmorphic features for fragile X syndrome (do chromosome study if indicated).
- CBC and peripheral blood smear examination should be done to rule out iron deficiency anemia if the child's dietary habits are limited.
- Routine Cranial CT / MRI scan not necessary.
- Audiometric and ophthalmic examinations should be done to rule out associated hearing and visual deficits, as this is essential in any communication disorder.
- No need to do an EEG routinely but a high index of clinical suspicion should be maintained for subtle symptoms of seizures.

EARLY INTENSIVE BEHAVIORAL AND EDUCATIONAL INTERVENTION THERAPY



- No known 'cure' for autism.
- But, early intensive behavioral and educational intervention therapy can help ameliorate core behavioral deficits.
- 15-25 hrs/week as soon as diagnosis of autism is considered and definitely before four years of age
- Interventions should be continued for 3- 4 yrs till they improve their ability to learn and get educated.

EARLY INTENSIVE BEHAVIORAL AND EDUCATIONAL INTERVENTION THERAPY – CONT..



- As every autistic child is unique the interventions are highly individualized.
- Skills are taught in small steps, mastered, and then generalized.
- Individualized 1-to-1 therapy provided in a distraction-free structured environment by behavioral therapists under supervision of a developmental pediatrician.
- Only positive reinforcement used to teach child.
- Parents trained to generalize the skills learnt by their child in the home environment.
- Non-retarded autistic children who continue to experience difficulties in regular schools may need to attend special schools to continue their education.

JUDICIOUS USE OF PSYCHOTROPIC MEDICATIONS



- Psychotropic medications used to reduce (but not necessarily eliminate) interfering behaviors to make the child more amenable to interventions.
- Medications usually for management of comorbidities
- Atypical antipsychotics (risperidone, olanzapine, clozapine) for temper tantrums, aggression, or self-injurious behavior;
- Selective serotonin-reuptake inhibitors (sertraline, citalopram, fluoxetine) for anxiety and repetitive behaviors; and
- Psychostimulant (methylphenidate), opioid antagonist (naltrexone) for hyperactivity.
- Symptomatic epilepsy needs to be treated and appropriate medication prescribed depending on seizure type.



Always
Unique
Totally
Interesting
Sometimes
Mysterious

Thank You

