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Childhood psychoses: A brief review

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Childhood psychoses are a group of rare but severe psychiatric disorders of children. Infantile autism has been the most well-known as well as extensively researched type of childhood psychosis. It is characterized by early onset, disturbances in interpersonal and emotional relationship, disordered language and behavior and chronic course. A variety of diverse etiological factors have been implicated but increasing attention is being given to presence of brain damage and specific cognitive deficits. The field of childhood psychoses remains one of the most interesting areas of research in child psychiatry. Meanwhile, because of significant long-term disabilities it poses a formidable therapeutic challenge.

Key words: Childhood psychosis; infantile autism.

Classification

Although isolated cases and small series of children with psychotic disorders were described earlier[2-4] the credit for attracting worldwide attention to this area goes to Leo Kanner, who described eleven case-histories in this landmark article published in 1943.[5] Infantile Autism or Kanner's Syndrome has since come to be regarded as by far the most widely accepted category of childhood psychoses. However a large number of other psychoses have been described by several workers, leading to a confusing proliferation of names. Some of the major types of psychoses with onset during childhood are briefly described.

Infantile Autism: This disorder has onset before three years of age and a slow but progressive course.

Disintegrative psychosis: These psychoses begin between three and five years of age and the onset is mostly acute. There is strong suspicion about organic brain disease in this group, and very frequently these children show clear clinical or laboratory central nervous system damage.

Childhood-onset schizophrenia: Schizophrenic illness can begin in childhood and adolescence, but onset before about ten years of age in rare. The clinical features and the course of illness follows the usual pattern for schizophrenic psychosis.

Childhood-onset affective psychoses: Manic as well as depressive illness can rarely occur during childhood.

Acute organic psychoses: These are acute confusional states or delirium which can be directly related to some demonstrable dysfunction of the brain due to C.N.S. or systemic illness. Common causes of delirium are encephalites, other febrile and infectious illnesses, electrolyte imbalance and poisoning.

Other less well accepted syndromes are

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pseudodefective, pseudoneurotic and pseudopsychopathic psychoses[6] of Lauretta Bender, Symbiltic psychosis[7] by Mahler, no-onset and acute-onset psychoses[6] by Despert, encapsulation and confusional autistic reactions[8] by Tustin, and Hellar's disease.[9] The different types of childhood psychoses can be reconceptualized on the basis of age of onset and course of illness. Anthony divided all types into three groups.[6] First group corresponds to psychoses with early onset and gradual worsening course. Second group has acute onset between three and five years and the third group has late onset with fluctuating course. These categories have been further studied and empirically validated by Kolvin et al using clinical as well as etiological criteria.[10-15]

Clinical features of infantile autism

Infantile autism is said to be more common in higher socio-economic groups. It is more prevalent in males. Overall, it is a rare illness, prevalence rates is estimated to be about 4 in 10,000.[16] Infantile autism begins very early in life. The children are brought to the clinic at 3 or 4 years of age or even later though the clinical features can usually be traced back to the first few months of life. Failure to assume an anticipatory posture when the infant is being picked-up may be the initial observation of the mother. These infants also do not adjust their body to the posture of the person holding them, hence behave like a 'sack of flour'. This is inspite of otherwise normal or only slightly delayed motor milestones like sitting or walking. By the age of 4 or 5 years most of the other clinical characterstics develop.[17]

(i) *Impairment in relationship with people:* Gross and sustained inability to relate with people has been described as one of the most fundamental or even 'pathognomonic' disturbance of this disorder. Parents describe the child' as if in a shell; 'happiest when left alone' or 'acting as if people were not there'. Direct physical contact with people is avoided and eye to eye contact is almost totally absent. These children usually do not mix with other children and are happy investigating objects and toys.

(ii) *Apparant unawareness of personal identity:* Autistic children seem to have a marked unawareness of their body parts of identity inappropriate to their age. They may be noted exploring their own body parts as if they are new objects. They also frequently confuse between personal pronouns like referring to themselves as 'you' or 'he'.

(iii) *Pathological preoccupation with specific things:* Many of autistic children become extremely attached to some specific objects which they constantly keep with themselves. However, the object may not be used for its usually accepted function.

(iv) *Resistance to environmental change:* Autistic children have an intense desire to keep their immediate environment same and they do not allow even minor changes. For example, they may insist that their toys and other personal objects be placed exactly in the same manner on the table and even a minor alteration is resisted strongly. This desire may extend on to highly complicated fixed rituals before eating or sleeping.

(v) *Abnormal perceptual experiences:* There may be diminished, accentuated or unpredictable response to sensory stimuli. For example, the child may be relatively insensitive to pain, but may react with instant panic to any loud voice or moving object. Hallucinations however, are not a feature of autism.

(vi) *Illogical anxiety:* The child may not react adequately in face of actual danger, but

may react with excessive and apparantly illogical anxiety to innocuous objects, situations or changes in the environment.

(vii) *Speedh defects:* Speech may be delayed or not acquired at all. Frequently these children are not receptive to commands and hence are regarded as deaf. However, hearing power is almost always good. They often do not make use of whatever speech they have acquired, because their interactions with people are grossly limited. Echolalia may be present and it may account for confusion between personal pronouns. Words and phrases may sometimes be used for entirely different meanings and purposes than the usually accepted ones.

(viii) *Distortion of motility patterns:* Motor activity may be increased leading to a condition similar to hyperkinetism or reduced leading to withdrawn state. Sometimes bizarre motility patterns like maintaining abnormal postures, rocking or elaborate rituals may be present.

(ix) *Intellectual retardation:* Autistic children usually do poorly on the tests for intellectual functioning. Their scholastic performance is also very poor. However, frequently they excel in one or the other area of functioning, showing normal or even above-normal capacity. For example, rote memory of some patients is so good that they can remember complicated tables or many pages or written material with little effort. Some other autistic children are known to have been unusually competent in musical field. Many of the children earlier described as 'idiot savant' may really be suffering from autism.

Relationship between infantile autism and adult schizophrenia

Leo Kanner [18] emphasised the specificity of the syndrome of infantile autism, however he thought that it belonged to the heterogenous group of schizophrenias as defined by Bleuler. Since then there has been a major controversy about the status of infantile autism vis-a-vis adult schizophrenia, with some workers believing that autism is nothing but schizophrenic illness with onset in early childhood. Creak used the term schizophrenic syndrome of childhood as synonemous with childhood psychosis.[17] However, with accumulation of more data about clinical features and other correlates, there seems to be no doubt that infantile autism can not be regarded as schizophrenia with onset in early childhood. The major features to differentiate these two entities are. (i) infantile autism is more common in families with higher socio-economic status, as opposed to preponderance of lower socio-economic families in adult schizophrenia.[19] (ii) Males outnumber females significantly in autism while the ratio for schizophrenia is almost equal.[16] (iii) The families of autistic children do not have a higher incidence of schizophrenia.[20] (iv) Clinically, autistic children do not show delusions, hallucinations and other obvious psychotic features which are the hallmark of adult schizophrenia. Even when autistic children grow-up to reach the adult age group, these symptoms are absent.[20] (v) A steady course is more common in autism while schizophrenia shows fluctuating course with remissions and relapses.[21] (vi) Retardation in intellectual development is very commonly associated with autism but absent in schizophrenia. (vii) Autism shows markedly impaired language skills with comparatively better visuospatial skills. It is not so in schizophrenia.[1] (viii) There is a high incidence of perinatal injuries and evidence of organic brain damage or dys-

function in autism, but not in schizophrenia.[14]

Etiological factors

There is no comprehensive and widely accepted theory available as yet which explains all or even most of the features of the disease. A brief summary of important directions of work done on the etiology of childhood psychoses is discribed.

(i) *Psychogenic factors:* Gross abnormalities in the development of interpersonal relations being one of the prominent symptoms of childhood psychoses, several theories have been advanced which attempt to explain its etiology on psychogenic factors. Kanner highlighted the cold and absessive personality of the parents of autistic children, which could result in abnormal emotionless interactive processes leading to autism.[5] However, Kanner did not rule out the contribution of the other factors including organic brain disease. margaret Mahler[22] regards childhood psychoses as a result of constitutional predisposition combined with a viscious cycle of pathogenic mother child relationship. Beeta Rank and co-workers[23] have also emphasised psychodynamic factors inherent in the early parent child relationship. Ego development has been the focus of attention by melanie Klein and Jack Rapoport.[4] Szurek[25] regards the etiology as wholly psychogenic and determined by unconscious drives and conflicts of parents.

However, most of these psychogenic theories suffer from the basic handicap of originating from psychotherapeutic work and hence can not be confirmed objectively. Infact later research to study the parental personality and attitudes have shown that the parents of autistic children almost invariably do not differ from controls.[13,26] Whatever interpersonal problems exist could well be because of inherent abnormalties in the child rather than vice-versa.[22]

(ii) *Biological factors:* Autism may be the final common behavioral expression of a wide variety of brain disorders at an early age. Almost every reported series of childhood psychoses presents evidence of brain dysfunction in atleast a proportion of the patients. Epileptic fits develop far more frequently in childhood psychoses than may be expected by chance.[14,28] EEG in majority of children shows abnormalities ranging from seizure pattern to widespread disorganization of hypsarrhythmia.[28] Although evidence of clear focal neurological deficits is not high many so-called 'soft neurological signs' are present in these children. These include whirling phenomena, immature postural righting reflex, hypotonic musculature and adventitious movements.[29] Rimland[30] asserted that hypoxia at the time of birth results in lesions in the reticular formation of brain leading to autism.

According to Bender pre or perinatal damage can decompensate the genetically vulnerable child to produce childhood schizophrenia.[24] Rubin believes that psychoses are chronic disordered autonomic states with an imbalance between the adrenergic and cholinergic mechanisms.[31] Glavin streesed similarities in behavior between children with retrolental fibroplasia and autism and hypotheiszed that both may be because of drastic change in oxygen tension in the early neonatal period.[32] Data from a twin-study suggest that genetic factors are important as monozygotic twins had a much higher concordance rate than dizygotic twins for autism. Siva Sankar[34] has found abnormalities in biogenic amines in

childhood psychoses, however specific biochemical markers have not yet been indentified.[35]

Although evidence of biological factors is most obvious in the acute disintegrative psychosis (Anthany's group-II), a proportion of infantile autism cases also shown clear evidence of brain damage. whether brain damage has to be generalised or in specific areas of brain is still not clear. Moreover, how brain damage gives rise to the specific cluster of symptoms also largely remains unexplained.

Markedly defcient language abilities of autistic children are in some respects similar to the language of a dysphasic child. There is evidence that autistic children manifest a specific cognitive defect involving language and this disability is probably necessary but not sufficient for the development of the behavioral syndrome of autism.[20,36] These impairments are severe, extend across different modalities in the process of perception and comprehension and are somehow related more to social communication. These deficits, present in almost all autistic children, may give rise to some of the social, emotional and behavioral abnormalities of autism. But these are qualitatively and quantiatively different from that associated with uncomplicated developmental disorder of receptive language (dysphasia).

The cognitive deficits also contribute to the low testable levels of IQ of autistic children.

Management

It is generally accepted that intensive psychodynamically-oriented psychotherapy for the child or the parents has no therapeutic role. Antipsychotic deugs and electro-convulsive therapy are also of limited value to the late onset childhood psychoses which resemble adult schizophrenia. Pharmacotherapy does not modify the course or severity of infantile autism.[37] However, antipsychotic drugs can be given for the symptoms of overactivity and aggressive behavior. In addition anti-convulsants are essential in children with epilepsy.

The focus of management for childhood psychoses should be an intensive programme of operant conditioning and educational training. It can be done in special in-patient units or as out patients with the help of parents. Essential to the success of this programme is the amount of time and individual attention given to each child by dedicated workers and parents. Primarily it works on the principle of rewards and encouragement given to the child whenever he shows a desirable response or action. Primary social and linguistic skills are imparted on one to one basis in the beginning. The child is also trained in looking after personal hygiene. later a more structured special classroom education can be instituted. Emphasis is given to active participation of parents so that they can reinforce the training during and after the intensive phase of treatment, parents often need counselling and support for this prolonged and arduous task. Group sessions for the parents on a regular basis are very helpful in this respect.

It is often debated whether autistic children require a different setting or they can be managed in association with mentally retarded children. There is no doubt that training of autistic children is much more complicated and specialized than that for mentally retarded children. However, those cases of autism who are virtually in the severe or profound retardation range may not derive much benefit from separate training.

Prognosis and outcome

In spite of very intensive and prolonged treatment, the outcome of autistic children is poor. The majority of these children remain severely handicapped in their language, social and emotional adjustment as well as work capacity on attaining adolescence and adulthood. Only about 10 per cent are well enough to work in unsheltered work situation.[28]

Two of the most important prognostic factors are testable level of intelligence and language abilities. Initial I.Q. of more than 50 and useful speech at the age of five indicate atleast some improvement on follow-up. Other factors indicating a poor prognosis are evidences of neurological dysfunction and presence of epilepsy.

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