
Recent Advances in Management of Child Psychiatric Disorders

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Abstract

Management of childhood psychiatric disorders is a challenging field in medical science. Recent researches have advanced the knowledge about biological basis of many psychiatric disorders, thus paving the way for use of drugs in increasing number of disorders of childhood such as attention deficit hyperactivity disorders, schizophrenia, depression etc. Still non-pharmacological methods of treatment remain to be important in many of these disorders and have been adopted by clinicians often for a better outcome. However, research is needed to better understand these disorders in order to develop rational basis for the use of various pharmacotherapeutic and psychotherapeutic techniques for the management of these disorders.

Key words -

**Childhood psychiatric disorder,
Pharmacotherapy,
Psychotherapy,
Behaviour therapy**

Psychiatric disorders in children are quite common. The very diagnosis of a clinical disorder in this age is often challenging, because of relative lack of specificity of psychiatric disorders in children and variability of expression in its clinical features, poorly established disease categories, involvement of developmental and sociocultural perspective leading to difficulty in defining and eliciting the psychopathology. Till the first half of the present century, the management of childhood psychiatric disorders was mainly non-pharmacological in approach. Although, psychostimulants were originally developed and used for hyperkinetic disorders of childhood over fifty years ago, a plethora of psychotropic agents generated as a product of biological revolution in psychiatry, were generally applied to children. The professional and social ambivalence about the use of psychotropic medication; concerns about the ethics of using chemical agents to modify behaviour in young children who are unable to appreciate the seriousness of their disorder and the treatment compounded the restraint when these drugs are considered for the treatment of children. However, better understanding of the psychopharmacological agents with respect to their efficacy, toxicology and also better understanding of the biological basis of behaviour and emotional disorders gradually gave way to a more judicious and cautious use of pharmacological agents in children.

Recently a surge of double blind crossover studies have established the use of psychotropic agents in children atleast in some disorders like attention deficit hyperkinetic disorders (ADHD). However, the use of psychotropic medications will usually, be more effective if paired with other pharmacotherapeutic interventions. Childhood behavioural and psychological disturbance typically have a complicating impact on important developmental domains, including family, school, and peer relationships. Psychotropic medication alone often fails to resolve the complication in function generated or sustained by the target symptoms. Therefore, careful differential diagnosis and development of a comprehensive

treatment plan are foundations for effective intervention. In this article the recent advances will be described, in sequence, on two major modes of interventions i.e. pharmacotherapy, and psychotherapy, in various psychiatric disorders in children.

Psychopharmacology of individual disorders

Childhood Schizophrenia: Childhood onset schizophrenia, though a rare disorder, has been shown in studies to be a discrete entity [1]. There is now some supportive evidence that antipsychotics are effective in the treatment of children and adolescents with schizophrenia but information on long term effectiveness and safety is lacking. In various studies haloperidol in a dose 0.20 to 0.12mg/kg was found to be superior to placebo [2]. Generally, the high potency antipsychotics are preferred to low potency ones because of their lesser anticholinergic side effect that interfere with learning. Clozapine, an atypical antipsychotic, is being currently assessed because of negligible extrapyramidal side effect to which children are more susceptible. A few studies have clearly demonstrated the efficacy of clozapine, [3], [4] without significant reduction in white blood cell after 2½ years [3]. Preliminary study on risperidone appears to be promising [5]. Tardive dyskinesias and neuroleptic malignant syndrome are major concerns in children following the use of typical antipsychotics. The common side effects of clozapine include tachycardia, tiredness, hypersalivation, orthostatic hypotension, agranulocytosis and seizures. The efficacy, safety of clozapine should be further studied and critically assessed in children before it can be recommended as a treatment of choice.

Major depression: The existence of major depression in prepubertal children and adolescents is now increasingly recognized. The advent of antidepressants and their effectiveness in the treatment of depression in adults was largely extrapolated by clinicians to treatment of depression in children and adolescents. However the superiority of antidepressants over placebo has not been demonstrated in double blind studies. The children and adolescents have a high placebo response (20-70%). Nevertheless, clinical use of antidepressants should be decided after carefully considering the efficacy and safety, risk of manic switch, cardiac arrhythmias and possible association of sudden death with desipramine. Fluoxetine, a serotonin reuptake inhibitor, has lesser side effects in children and can be used safely.

Lithium augmentation may be of use in tricyclic resistant childhood depression but adequate data are not available

Bipolar disorder: Up to 20% of bipolar disorder report the onset of illness in adolescence; in prepubertal children the condition is rare. Anecdotal reports and a study [6] suggest efficacy of lithium in bipolar disorder. No double blind control study is available to our knowledge till date. The efficacy of lithium is limited in adolescents with prepubertal onset of psychopathology, with comorbid personality disorder or with mixed episodes. Children may require higher doses of lithium than adults. In 6-12 year old children 30mg/kg/day in divided doses will give a lithium level of 0.6 to 1.2 meq/litre. Although lithium accumulates in bone and renal glomeruli, those effects are not known contraindications to lithium in children. Though studies in adults have shown efficacy of carbamazepine and sodium valproate in treatment of bipolar disorder, systematic studies in children are lacking.

Attention-deficit hyperkinetic disorder (ADHD)

This disorder is characterized by inattentiveness, distractibility, hyperactivity, associated emotionality, intrusiveness or destructiveness due to impulsivity with resultant academic underachievement and impaired social learning. ADHD exemplifies the definite role of pharmacotherapy in psychiatric disorder in childhood and adolescents. The catecholaminergic stimulants have the best documented efficacy in controlled studies and are demonstrably the most specific for the primary symptoms of ADHD [7]. Their efficacy in improving the academic performance seems to be well established. Evidence for learning is less impressive. Methylphenidate is the most commonly prescribed medication for ADHD in past because of its predominantly central site of action. It is also associated with less marked cardiac side effect than dextroamphetamine. The other drug that is less commonly used is magnesium pemoline. Methylphenidate is typically administered with breakfast and again at lunch to provide adequate coverage for children's behaviour at school hours. Magnesium pemoline has the advantage of chewable tablets and no abuse potential. Recently, a double blind crossover study [8] with placebo control design, demonstrated a linear effect of dose of pemoline upon target symptoms of ADHD, the effect beginning 2 hours after ingestion and lasting through seventh hour after ingestion. The clinical efficacy was comparable to methylphenidate with minimal side effect.

Tricyclic antidepressants are generally recognized as good secondline drugs for ADHD. They are of documented behavioural benefit for hyperactivity but their effect on cognition, attention and especially aggressive and conduct problems is uncertain. Tricyclics may improve comorbid tic disorder in patients with ADHD [9], [10]. Some studies indicate that MAO inhibitors may prove efficacious in ADHD. Data on selective serotonin reuptake inhibitors is promising in open trials but controlled trials are needed before any definitive statement about their clinical efficacy can be made.

Clonidine, the central alpha [2] agonist, is not as effective as the stimulants in managing distractibility and inattentiveness, but it may yield greater global improvement in children who have comorbid ADHD with tics, than for those with ADHD alone [11]. A morning stimulant dose coupled with a night time dose of clonidine may alleviate insomnia and difficulty in awakening [12]. Other drugs which are currently under trials are buspirone, and anticonvulsants etc.

Conduct disorder: Conduct disorder, one of the commonest childhood psychiatric disorders, is frequently comorbid with other disorders, including ADHD and learning or developmental disorders. The outcome is usually poor, with later diagnoses of psychosis, substance abuse, and sociopathy. Pharmacologic management is indicated in comorbid conditions such as ADHD, and aggressive behaviour that often coexists with conduct disorders. Conduct disorder is behaviourally a heterogeneous disorder, where aggression is the feature expected to respond to pharmacological intervention.

Lithium carbonate has proven antiaggressive properties and was found to be superior to placebo in reducing aggression in patients with conduct disorder [13]. This drug has lesser side effect than stimulants or antipsychotics especially in the children with mental retardation or autism. Stimulants are effective in decreasing aggression and other disruptive behaviours with comorbid conduct disorder and ADHD.

Anticonvulsants like carbamazepine was reported to have antiaggressive properties in adults as well as children [14]. A pilot study clearly showed effectiveness of carbamazepine in 10 hospitalized children with conduct disorder with severe aggressiveness and explosiveness [16]. However, side effects were particularly problematic.

Clonidine was also shown to be effective in reducing the aggressive behaviour in a recent study [15]. GABA plasma levels increased significantly during treatment. Clonidine warrants a critical assessment with special consideration to its side effects on a larger sample and in a double blind study design. Other interesting line of research is the use of serotonergic drugs in conduct disorder. But comprehensive data are lacking in this area. Anecdotal reports have supported efficacy of selective serotonin reuptake inhibitors (SSRI), buspirone. Further research is necessary in this area.

Anxiety and obsessional disorders

The superiority of tricyclic antidepressants over placebo was reported previously in separation anxiety disorder. But recent controlled studies have failed to replicate such a result. Recently there have been reports of promising results in elective mutism associated with high anxiety using fluoxetine [16]. Clomipramine has been established as the treatment of choice for childhood obsessive compulsive disorders (OCD). Recently there have been studies showing clear efficacy of fluoxetine in childhood OCD. But long term outcome studies using these drugs are lacking.

Pervasive developmental disorders (PPD)

Autistic disorder is the well-defined PDD characterized by qualitative impairment in social interaction, communication and imaginative activity as well as markedly constricted affect. In a subgroup of autistic children with target symptoms such as temper tantrums, aggressiveness, self injury, hyperactivity and stereotypies, appropriate psychoactive agents may be an important part of a comprehensive treatment program. The drugs that have been shown to be efficacious in these areas include high potency antipsychotics in low dose; fenfluramine; opioid antagonists against self injurious behaviour; sympathomimetics, clonidine to reduce the behavioural symptoms [17]. The efficacy of various other psychopharmacological agents including buspirone, propranolol and fluoxetine, in a few autistic children has also been reported.

Other conditions in which pharmacotherapy is recommended are tricyclic antidepressants in nocturnal enuresis, antipsychotics in tic disorders, Clonidine in Tourette's syndrome and anticonvulsants in various seizure disorders.

It is apparent that the use of psychotropic drugs in children for treating psychiatric disorders is based on empiricism and on target symptom approach rather than the disease category approach. To that extent it can even be considered non-specific and this will, of necessity, continue till the biology of disorders is better if not fully understood. Moreover, these pharmacological agents prepare the ground for institution of non-pharmacological interventions which are essential components of the overall management.

Non-pharmacological approaches

Until recently most of the childhood psychiatric disorders were explained on the basis of various

psychological and psychodynamic theories. Elaborate theories were propounded for disorders like autism and childhood schizophrenias which now a days are understood as neuro-developmental disorders. Psychotherapy, particularly intensive psychodynamic psychotherapies and play therapy based again on psychodynamic principles were the mainstay of treatment till the middle of present century. The advent of behaviour therapy made a significant new addition to the treatment strategies for children's problems. More recently, family therapy has established itself as an important treatment technique and has been adopted by child psychiatrists as well.

Generally non-pharmacological therapies are combined with pharmacological treatment for a better outcome. Although a large number of psychotherapies are available based on different theoretical paradigms, these have been broadly grouped into the following three types depending upon the main target of therapy and the distinctiveness in approach.

1. Psychotherapies - individual and group therapies
2. Behavioural and cognitive-behavioural therapies
3. Family therapies

Individual psychotherapy

Individual psychodynamic psychotherapy is same in children as in adults based on Freudian psychoanalysis. It is rare that pure, intensive, solitary individual therapy is indicated for any child. This method is time-consuming and slow and there are other shorter, quicker and effective methods of treatment like behaviour therapy and drugs which are preferred over individual psychotherapy or may even be combined with it. There have been various modifications to psychodynamic psychotherapies based on ego psychology, attachment theory and object relations theory etc. which have made significant contribution to the treatment of children.

Play as a medium of emotional expression and therapeutic change has been used extensively in children. Play is used as a vehicle of communication between the child and the therapist that reveals his/her inner feelings and conflicts, ideas and attitudes, conceptions and misconceptions, anxieties and worries and so on. Play therapy is preferred for younger children and for those who have difficulty in communication.

Supportive therapy is indicated in mental retardation, PDD. and psychotic children. Supportive expressive therapy is generally advocated in children with low frustration, tolerance and impulsivity whereas psychoanalytic treatment is generally indicated for dissociative disorder, dysthymia, gender identity disorders etc [18].

Group psychotherapy: Group psychotherapy alludes to psychodynamic techniques applied in a group of children, whether related or unrelated. Group treatments are unique in making use of peer support, group cohesiveness, shared universal issues, less intense dependence on the therapist than in individual therapies. Group psychotherapy for children and adolescents has been advocated as a treatment of choice. Traditional activity therapy, or play therapy have been modified into group psychotherapeutic approaches. It can be an experiential group where psychoanalytic phenomena of projection and transference is taken as basis of the therapeutic intervention; or an educative group in which cognitive behavioural approach is used. Group therapy is appropriate as primary or adjunctive therapy for many psychiatric disorders such as ADHD, emotional problems, children of divorced parents, social phobia

and schizoid personality disorder. Markedly aggressive or disruptive behaviour and florid psychosis may be reasons for not suggesting group therapy.

Behavioural and cognitive behavioural therapy (BT and CBT)

Behavioural approaches utilize the principles of learning theory and allied aspects of experimental psychology of modification of a undesirable and maladaptive behaviour. They start from a clear objective of producing planned or goal directed change. They effect this change by either of the following intervention

- (i) altering, the immediate consequences of undesirable behaviour
- (ii) reducing the probability of the behaviour by rearranging the environment,
- (iii) facilitating the emergence of alternative skills and
- (iv) importing new patterns of behaviour.

The behavioural models act on the basis of classical and operant conditioning. The chief techniques of behaviour therapy include:

- (i) classical conditioning methods such as implosion and systematic desensitization,
- (ii) operant techniques in which the event immediately preceding a behaviour and/or those immediately after (reinforcing or punishing contingencies) are systematically manipulated so as to change the target behaviour.

Cognitive behavioural methods are more complex. They include behavioural strategies as well as cognitive interventions to produce change in thinking, feeling and behaviour. They involve procedures such as active instruction in alternative solutions to problems (e.g. non-confrontational methods in aggression), covert self instruction challenging maladaptive beliefs, encouraging children to develop more optimistic or reasonable attitudes about situations that distress them.

Both BT and CBT have wide areas of clinical application in management of childhood psychiatric disorders. These techniques when applied either alone or in combination with specific pharmacotherapy, have shown promising results in management of anger and aggression seen in conduct disorders; anxiety, depression; [19] hyperactivity and impulsive behaviour in ADHD; behaviour such as encopresis, academic skill disorders and management of behavioural problems secondary to tic disorders and mental retardation [20], [21]. Recent trends indicate that behavioural therapy is being used in the implementation of self-control and self-management interventions, health related problems in pediatric medicine and in stress management. Thus the scope and application of behaviour therapeutic techniques have been enlarged significantly in recent years.

In their review Barnett et al [22], found out that individual psychotherapy was equally efficacious as other forms of therapy. Kazdin [23], in his review observed that behavioural treatment appeared to be more effective than non-behavioural treatment. The children with phobias, impulsivity, hyperactivity and somatic problems did best with behaviour therapies [24].

Outcome in psychotherapy is by and large a value judgement. Most reviews have concluded that psychological treatments are effective in producing therapeutic benefit. However research on psychotherapy with children needs to be more focused and specific.

Family therapy: Family therapy is a psychotherapeutic endeavour that explicitly focuses on altering the interaction between or among family members and seeks to improve the functioning of the family

as a unit, or its subsystems and/or the functioning of the individual members of the family. It involves face to face work with more than one family member, although it may involve a single member for entire course of treatment. Family therapy was not included in the therapeutic armamentarium of child and adolescent psychiatrists until recently. It is only now that a clear and convincing evidence favouring efficacy of family therapy has been available that this therapy has been integrated into the total clinical management of children. In 1980's specialized family therapy approaches for specific disorders or family dysfunctions [25], were suggested as for example in treatment of anorexia and bulimia, conduct disorder, schizophrenia etc.

Family therapy involves various techniques and models like parent training, behavioural family therapy, functional family therapy, and structural family therapy etc. Child psychiatrists, now-a-days, make extensive use of this therapy specially for a wide variety of disorders ranging from emotional behavioural disorders to neurotic and psychosomatic disorders [24].

Conclusions

In recent years, advances have been made in the area of child psychopharmacology in relation to some disorders such as depression, schizophrenia and OCD. There are some other specified disorders where drug treatment has definitely established efficacy and indication such as in ADHD, and Tourette's disorders.

However, for a rational treatment approach, it is important to investigate further the psychosocial contribution towards manifestation of disorders e.g. depression and conduct disorders. Furthermore it is also necessary to identify which target symptoms respond to drugs and which do not. Finally careful and well structured studies are necessary to evaluate the efficacy of combined treatment approaches in the management of childhood disorders.

1. Asarnow R F, Asarnow J R, Childhood onset schizophrenia: editor's introduction
Schizophrenia Bulletin Page: 20 :591-7, 1994
2. Cambell M, Ceuva J, Psychopharmacology in child and adolescent psychiatry: A review of the past seven years. Part II
Journal of American Academy of Child Adolescent Psychiatry Page: 34: 1262-72, 1995
3. Gordon C T, Frazier J A, Mc Kenna K, et al, Childhood onset schizophrenia an NIMH study in progress
Schizophrenia Bulletin Page: 20: 697-712, 1994
4. Frazier J A, Gordon C T, Mc Kenna K, et al, An open trial of Clozapine in adolescents with childhood onset schizophrenia
Journal of American Academy of Child Adolescent Psychiatry Page: 33: 658-63, 1994
5. Armenteros J L, Whitaker A H, Joachim N, Gorman J, Open trial of risperidone in adolescent with schizophrenia. Final programme
International Academy for Biomedical and Drug Research, Florence, Italy Page: pp 176-77, 1995
6. Varanka I M, Wellor R A, Weller E B, et al, Lithium treatment of manic episodes with psychotic features in prepubertal children
American Journal of Psychiatry Page: 145: 1557-9, 1988
7. Jacobitz D, Treatment of attentional and hyperactivity problems in children with sympathomimetic drugs. A comprehensive review

- Journal of American Academy of Child Adolescent Psychiatry* Page: 29: 677-88, 1990
8. Pelham W Jr, Swanson J M, Furman M B, Schwindt H, Pemoline effects on children with ADHD: A time response by dose-response analysis on classroom measures
Journal of American Academy of Child Adolescent Psychiatry Page: 34: 1504-12, 1995
9. Spencer T, Biederman J, Kerman K, et al, Desipramine treatment of children with attention deficit hyperactivity disorder and tic disorder
In Newcorn JH (ed): Scientific proceedings. Washington, American Academy of Child and Adolescent Psychiatry
Page: 75, 1992
10. Spencer T, Biederman J, Wilens T, et al, Nortriptyline treatment of children with attention deficit and hyperactivity disorder and tic disorder or Tourette's syndrome
Journal of American Academy of Child Adolescent Psychiatry Page: 32: 205-10, 1993
11. Steingard R, Biederman J, Spencer T, Clonidine treatment of attention deficit and hyperactivity disorder and comorbid tics
In Newcorn JH (ed), Scientific proceedings. Washington, American Academy of Child and Adolescent Psychiatry
Page: p 75, 1992
12. Brown T E, Gammon G D, Attention deficit and hyperactivity disorder (ADHD) associated difficulties falling asleep and awakening
In Newcorn J (ed): Scientific proceedings. Washington, American Academy of Child and Adolescent Psychiatry
Page: p 76, 1992
13. Campbell M, Adams P B, Small A M et al, Lithium in hospitalized aggressive children with conduct disorder: a double-blind and placebo controlled study
Journal of American Academy of Child Adolescent Psychiatry Page: 34: 445-53, 1995
14. Remschmidt H, The psychotropic effect of carbamazepine in non-epileptic patients, with particular reference to problems posed by clinical studies in children with behavioural disorders
In: Epileptic seizures-Behaviour-Pain. Birkmayer W, ed Bern; Hans Huber Page: pp 253-8, 1976
15. Kempf J P, Devane C L, Levin G M, Jarecke R, Miller R L, Treatment of aggressive children with clonidine: results of an open pilot study
Journal of American Academy of Child Adolescent Psychiatry Page: 32: 577-81, 1993
16. Black B, Uhde T W, Fluoxetine treatment of elective mutism: a double blind, placebo controlled study. Results of an open pilot study
Journal of American Academy of Child Adolescent Psychiatry Page: p 68, 1993
17. Famarularo R, Kinscherff R, Pediatric Psychopharmacology
In: Developmental & behavioural pediatrics. (Levine ML, Carey WB, Croker AL. eds) Page: pp 740-53, 1992
18. Kernberg PF, Individual Psychotherapy
In: Comprehensive Textbook of Psychiatry, (Kaplan HI, Saddock BJ eds) William Wilkins, Baltimore
Page: 2399-2412, 1995
19. Stark K, Rouse L & Livingston R, Treatment of depression during childhood & adolescence; cognitive behavioural procedures for the individual and family
In: Child & Adolescent Therapy; Cognitive Behavioural Procedures, (Kendall P.C. ed). Guilford Press,
Page: 165-208, 1991
20. Kendall P C, Lochman J, Cognitive behavioural therapies
In: Child & Adolescent Psychiatry : modern approaches. (Rutter M, Taylor E & Hersov L. eds). Oxford
Page: pp 844-57, 1994
21. Werry S J, Wollersheim J P, Behaviour therapy with children and adolescents: A twenty year overview
In: Annual Progress in child psychiatry & child development (Chess S & Hertzog M. eds.) Page: p 413-53, 1990

22. Barnett R J, Docherty J P, Frommelt S M, Special Article : A review of child psychotherapy research since 1993
Journal of American Academy of Child Adolescent Psychiatry Page: 30: 1-14, 1991
23. Kaxdin A E, Psychotherapy for children and adolescents: Current progress and future research direction
American Psychology Page: 48: 644-56, 1993
24. Casey R J, Berman J S, The outcome of psychotherapy in children
Psychological Bulletin Page: 98: 388-94, 1985
25. Minuchin S, Montalvo B, Techniques for working with disorganized low socio-economic families
American Journal of Orthopsychiatry Page: 37: 380-7, 1977
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