

Psychotropic Medication in Acute Psychiatric Disturbances in Children

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The use of psychotropic drugs in children with acute psychological disturbance should only be considered with full knowledge of their possible side effects and the limitation of their usefulness in acute situations. A patient should not be medicated if other means can be used to control the patient's acutely disturbed behavior. Many psychotropic drugs are not recommended for use in children, or their clinical application is not well documented. Dosage limits for use of psychotropic drugs are not well defined. There are many possible low incidence, high morbidity side effects demonstrated in adults which may affect children.

The use of psychotropic drugs in acutely disturbed children should be undertaken with care. These drugs are not a panacea, and should be seen as an adjunct to other forms of intervention. The prescription of a drug never represents a definitive disposition; and an understanding of the differential diagnosis and ultimate diagnosis is essential for the rational management of a child who presents to the family physician with an acute psychological crisis. The emphasis in this brief presentation is on the pitfalls in the use of psychotropic drugs, and the illustration of the appropriate use of medication, in selected crises. For the purposes of this discussion, a child is defined as an individual up to 16 years of age.

Precautions

The following delineation of cautions is intended to heighten the family physician's sensitivity to basic issues related to the use of psychotropic drugs and, in particular, to their use in a crisis situation.

1. A patient should not be medicated if other means can be used to control the patient's acutely disturbed behavior or to support the patient's psychological functioning. The provision of a safe

environment, the attention of relatives, removal to a more soothing environment, or reassuring conversation with the patient may all serve this end.

2. If it is clear that there will be a need (a) to further evaluate a patient, (b) to evaluate a patient's symptoms for exposure to a toxin, or (c) to monitor vital signs, a drug that will obscure the underlying disorder should not be prescribed.

3. Medication should not be prescribed that will leave a patient obtunded if there is a chance that he will be unattended or receive inadequate supervision. When it is apparent that a patient will have to be transported to another facility, the appropriate caretakers at that facility should be consulted as to their view of the appropriate medication, since a re-evaluation by the receiving-facility caretakers is likely.

4. One should not prescribe a medication without properly informing the patient and/or his relatives or guardian of the type of medication and the potential major side effects, even though it may be known that the side effects are rare. Table 1 details the broad range of side effects noted in adults and children.

5. Medication should not be prescribed in an acute situation if there is compromised or uncertain cardiac function, anemia, blood dyscrasia, seizure disorder, or allergic sensitivity. A complete blood count with a differential analysis, serum alkaline phosphatase, serum glutamic-oxalocetic transaminase, serum glutamic-pyruvic

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Table 1. Side Effects of Psychotropic Drugs

Drug	Side Effects
Chlorpromazine	(1) Drowsiness. (2) Jaundice, a low incidence regardless of dosage. (3) Hematologic disorders, rare, including agranulocytosis, eosinophilia, leukopenia, hemolytic anemia, thrombocytopenic purpura, and pancytopenia. (4) Hypotensive effects—postural hypotension, tachycardia, fainting, and dizziness. (5) Electrocardiographic changes have been noted; sudden death due to cardiac arrest has been noted. (6) Central nervous system effects—extrapyramidal reactions resembling Parkinsonism, dystonic reactions, and hyperreflexia in the newborn. (7) Tardive dyskinesia. (8) Increased psychiatric symptoms and catatonia-like states have been noted rarely. (9) Convulsive seizures (petit mal and grand mal) have been reported in patients with EEG abnormalities. (10) Allergic reactions of a mild urticarial type and photosensitivity are seen. (11) Autonomic reactions, including dry mouth, nasal congestion, constipation, adynamic ileus, urinary retention, miosis and mydriasis, have been noted. (12) Mild fever and rare hyperpyrexia have been noted after large intramuscular doses. (13) Sudden death due to asphyxia secondary to failure of the cough reflex has been reported.
Trifluoperazine	(1) General side effects noted for chlorpromazine. (2) Antiemetic effect may mask signs of overdose with other toxic drugs or obscure the diagnosis of intestinal obstruction and brain tumor, also noted with chlorpromazine. (3) Intensification and prolongation of the action of central nervous system depressants have been noted.
Thioridazine	(1) General side effects noted for chlorpromazine. (2) Exfoliative dermatitis. (3) Laryngeal and angioneurotic edema. (4) Asthma. (5) Opisthotonus and oculogyric crises; seen with other medications as part of extrapyramidal symptoms. (6) Behavioral effects suggesting a paradoxical reaction including excitement, bizzare dreams, and confusional states.
Chlordiazepoxide	See text.
Diazepam	(1) Drowsiness, fatigue, and ataxia. (2) Possible increase in the frequency or severity of grand mal seizures; also noted if withdrawal is abrupt. Minor changes in EEG, usually low voltage, fast activity of no significance. (3) Central nervous system depressant effect. (4) Potentiation of phenothiazine, narcotics, barbiturates, MAO inhibitors, and other antidepressants. (5) Neutropenia and jaundice. (6) Constipation, depression, incontinence, blurred vision, and paradoxical behavioral reaction. (7) Many of the autonomic and dermatologic changes noted above.
Diphenhydramine	(1) Atropine-like effects. (2) Drowsiness, nervousness, headache, insomnia, and tingling. (3) Urticaria, photosensitivity, and drug rash. (4) Anaphylactic shock. (5) Hemolytic anemia.
Imipramine Amitriptyline, etc	See text.

transaminase, and urinalysis should be drawn for baseline data.

6. Medication should not be prescribed without at least strict control if there is the likelihood that the recipient will subsequently use the medication in a self-destructive attempt, or as a supplement to a drug habit. This has become a serious problem well documented in Emergency Room practice.^{1,2} In the author's experience this misuse of medication may occur in those as young as ten years of age.

7. Overmedication should be avoided. It is better to use a smaller initial dose followed by a second dose if the desired effect is not achieved. It is preferable to use the oral route of administration if a patient is cooperative. The use of intramuscular medication is necessary in some instances in the management of the acutely agitated patient, but should be administered with sufficient assistance to handle any upsurge in agitation prior to the medication's taking effect.

8. The clinician must be aware that many of the more commonly known psychotropic medications are not approved for use in children within certain age ranges, and further that it is common to hear of the use of psychotropic medication in dosage ranges that are clearly beyond those recommended in the *Physicians' Desk Reference* or by the Food and Drug Administration. This is defended by clinicians who have established their own perception of clinically efficacious dosage ranges, but occasional users of such medications should confine themselves to more conservative limits. This is particularly true in a crisis situation when there may not be the rapport with the family or patient seen in ongoing situations in which psychotropic medications are used.

9. A patient with a psychiatric condition of chronic duration should not be medicated acutely without an attempt to provide for a more definitive intervention. For example, the chronically depressed patient should not receive an antidepressant medication on an "emergency" basis with the expectation that there will be an immediate therapeutic effect. On the other hand, the acutely agitated chronic schizophrenic may require medication.

10. Psychotropic medication should not be used if there is not a plan for follow-up of the patient either by the physician or by some other responsible individual or institution.

11. One should be aware of the potential meaning to the patient of the prescription of a psychotropic drug. Some patients and families will view the prescription of a psychotropic medication as a rejection, or as an unspoken resignation that the patient is hopeless or "mental."

Use of Psychotropic Drugs

In considering the specifics of the use of psychotropic medication, it is very important to know that controlled studies of efficacy are few, and that there is a marked lack of agreement in terms of diagnostic categories.^{1,3} This hampers the rational use of these medications, and leads the clinician to a reliance on his often-limited clinical experience. Clinicians tend to become comfortable with the use of particular medications and familiar with the dosage range for different patients and disorders. Newer drugs are frequently touted as being superior for various reasons, but when they are used more widely, it is frequently found that they produce the same or worse side effects than already-marketed medications; however, this is clearly not always the case. It is preferable for the family physician to become familiar with a few medications.

Dosage limits for psychotropic drugs are not well defined. Children may tolerate higher doses than adults, and more severely disturbed children may tolerate higher doses than less severely disturbed children. Unfortunately, this too has its exceptions. There are many children who appear acutely sensitive to certain psychotropic medications. Table 2 presents a compilation of dosage ranges for the more commonly used medications.^{4,5}

There are relatively few specific indications for the use of psychotropic drugs in a psychological crisis. The following are the most common: (1) acute agitation, (2) severe anxiety, (3) psychosis, (4) dissociative reaction, and (5) school phobia.⁵ In depression it is not appropriate to use antidepressant or other psychotropic medication acutely unless ongoing close support will be provided. If one feels the depressed patient is in need of rapid symptomatic relief, hospitalization and/or consultation with a mental health professional should be considered.

In the acutely agitated patient, it is necessary to identify the underlying disorder. The clinician should in all instances see the behavior rather than

prescribe on the basis of report. Agitation is defined as increased motor activity of acute onset with randomness, possible aggression, and an affective state of heightened tension, nervousness, and possible obsessive ideation. Reassurance, removal from stimuli, and attendance by competent personnel are the first modes of intervention. If evaluation indicates no contraindications and the agitation is such that control is indicated, chlor-

promazine with its sedative effect is the drug of choice. A prompt response can usually be expected from following standard dosage guidelines.

Management of the severely anxious patient requires the same supportive measures as in the agitated patient. In addition, it is necessary to determine if this is a repetitive occurrence which may suggest more significant underlying psychopathology. A child may be considered acutely

Table 2. Dosage Range for Psychotropic Drugs

Medication	Age		
	0-6 years	6-12 years	12 years and older
Chlorpromazine	Used in more severe psychiatric disturbance, but not generally recommended for conditions discussed.	0.5 mg/Kg every 4-6 hours by mouth. 0.5 mg/Kg every 6-8 hours, not to exceed 10 mg intramuscularly. This dose may be repeated in one hour.	10 mg three or four times a day, or 25 mg twice or three times a day. 25 mg intramuscularly, which may be repeated in one hour. Subsequent doses should be 25-50 mg three times a day.
Trifluoperazine	Not recommended.	In hospitalized psychotic children, 1.0 mg daily or twice a day. Increased to, but not to exceed 15 mg.	1 or 2 mg twice a day orally.
Thioridazine	Not recommended.	Ages 2-12 years, 0.5 to 3.0 mg/Kg per day. For moderate disturbance, 10 mg twice or three times a day. For the severely disturbed, 25 mg two to three times a day.	Same dosage range by weight.
Chlordiazepoxide	See note in text.		
Diazepam	See note in text.	Age six months to 12 years, 1.0 mg to 2.5 mg three or four times a day.	2.0 to 10.0 mg two to four times a day.
Diphenhydramine	Over two years, 12.5 to 25 mg three to four times a day.	5.0 mg/Kg/day not to exceed 30 mg.	50 mg, three to four times a day.
Amitriptyline and Imipramine	The safety and efficacy of various suggested dosage regimens have not been thoroughly studied. The medications are approved for use in enuresis in a dosage range of 1.0-2.0 mg/Kg/day.		
Monoamine oxidase inhibitors	Because of their toxicity, these drugs should not be given to children.		

anxious if he evidences nervousness, a preoccupation with acute fears or worries, possible withdrawal, episodic agitation, random nongoal-oriented activity, and possibly diffuse or focal somatic complaints. Time spent in trying to elicit a clear precipitant from the child or family may offer clarifying data about the degree of pathology and may be therapeutic in itself. If the anxiety persists after preliminary intervention, then a phenothiazine in the appropriate dose is indicated. Minor anti-anxiety agents should be avoided in this condition as will be discussed later. Diazepam is widely used in mild to moderate anxiety states in older children and adolescents, but control data do not exist. Diphenhydramine is effective in mild to moderate anxiety states in younger children and is generally benign.

Psychosis, hallucinosis, and dissociative reactions are states of acute decompensation with impaired reality testing, tangential thoughts that are difficult to follow, possible visual and auditory hallucinations, preoccupation with sometimes bizarre concerns or interests, or abrupt changes in patterns of dress and behavior. Hallucinosis may be a more isolated finding, and a dissociative reaction is more likely to be transient and possibly repetitive. Frequently, there is an overtly or covertly traumatic precipitant involving loss, sexual phenomena, or anger. Drugs of abuse may also precipitate such reactions. A careful differential diagnosis including head trauma, brain tumor, exposure to toxins, and encephalitis should be considered. The first four precautions which were previously discussed should be carefully observed.

Only after an appropriate evaluation should medication be prescribed in an appropriate, small initial dose and increased until there is symptomatic relief. The phenothiazines are most useful (Table 2). If agitation or assaultiveness is an accompanying symptom, then chlorpromazine is the medication of choice. Otherwise, trifluoperazine or thioridazine offer good control with less sedation. Persistence of symptoms, evolution of more complex and bizarre symptoms, or the presence of suicidal or homicidal ideation are indications for referral to a mental health resource. Eventual collaboration with a mental health resource is most useful for long-term planning.

The use of psychotropic medication in acute school phobia is of recent origin.⁶ Should such a

patient present to the family physician, a detailed history should be taken with emphasis on possible precipitants and the presence of a more general family crisis which is presenting with the child's refusal to go to school. The complex psychodynamic issues involved in school phobia are beyond the scope of this paper. Medication for the child who is refusing to go to school should only be considered as adjunctive and as a last resort. Medication should follow consultation with a mental health resource. This caution applies to school phobia in both younger children and adolescents.

A special comment applies to the minor tranquilizers. They may be effective in the anxious older adolescent, but it has been demonstrated in younger children and some patients at any age that low doses of anti-anxiety medication may stimulate underlying psychiatric disturbance and may release more aggressive behavior.⁷ Therefore, if agitation or anxiety is severe enough to be treated on an emergency basis, one should consider the use of one of the major tranquilizers as discussed earlier. Further, in the school-aged child the minor tranquilizers that are anxiolytic may impair cognitive functioning and coordination.⁸

The vast majority of psychological crises in children can be managed without resorting to the use of psychotropic medication. As in all illnesses of childhood, a careful history, observation, appropriate parental involvement, and time will make most diagnoses clear and will in themselves be therapeutic. The possible pitfalls in the use of psychotropic medication frequently outweigh the anticipated therapeutic benefits.

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