Children and adolescents presenting to emergency with psychiatric problems

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Abstract

Children and adolescents presenting to emergency department for mental health problems constitute a small percentage. 'Emergency' in this group is different from the conventional medical emergency seen in seriously ill children presenting to emergency department. Parents bring their children as last resort to emergency department for acute behavioral problems. There is need to identify common psychiatric emergencies in these group and institute appropriate interventions before making referral plan. In future, there is likely to be an increase in the burden of morbidity due to neuropsychiatric conditions in children and adolescents as per WHO predictions. Though most common reason for emergency visits is for suicide attempt or violence, there is need to understand the underlying psychiatric disorders. As there are almost no community services for children and adolescents with mental health or substance use problems, and not adequate specialists to deal with these problems, makes them present to the emergency more frequently. Here lies the preparedness of pediatric residents to acquire competency to deal with such emergencies and to develop appropriate consultation-liaison services for children and adolescents with these special needs.

Keywords: adolescents, children, emergency psychiatry

Introduction

Psychiatric problems do sometimes lead to emergency; this 'emergency' differs from usual medical emergency. It is an acute disturbance or exacerbation of pre-existing disturbance of behavior, mood, thought which if unintervened, is likely to lead to harm either to the individual or to others. It is always difficult to predict how much dangerous one is to self or others due to mental health problems. During such doubts it is better to go for essential steps in assessment and instituting proper intervention to decrease such risk. There is less research and hence less information on this group presenting to emergency with psychiatric problems. This is a brief review of various psychiatric disorders in this age group that may present in emergency ward.

In the emergency ward when a child has been brought with the main complaints of behavior problem; assess for safety, suicidality, aggression or assaultative potential, underlying medical condition, lethality of trauma, substance abuse. Most common presentations of psychiatric problems in emergency in this pediatric age group are suicide attempt or suicidal ideation and aggression.[1]

Suicide: India has reported highest rate of suicide among adolescents aged between 10-19 years.[2] It is the third leading cause of mortality in the age group 10-14yrs and 15-19 yrs as per US statistics.[3] Shooting with gun, suffocation, hanging and poisoning are common methods. While in US use of fire arms is a common mode of suicidal attempt, in India it is by hanging or by poisoning. Risk factors that suggest high risk for suicide in an adolescent presenting to emergency with suicidal ideation are-presence of psychiatric disorder, substance abuse, prior suicide attempt, poor impulse control, positive family history of suicide attempt or alcoholism or psychiatric disorder, presence of perceived hopelessness, presence of current stressors, social withdrawal, cognitive distortion, inability to trust treating clinician. More the number of risk factors higher the risk of attempting suicide. Protective factors against attempting suicide are having better coping with problem strategies, problem solving skills, social support, future optimism, positive attitude towards treatment.

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Assess for suicidal ideation at present or any plans for such. Asking about any 'ideas to harm self' is a soft way of asking 'are you planning to kill yourself'. Enquiring this doesn't induce such thinking in the child but it will help in bringing out such ideas if they are harboring and it increases the trust in the treating clinician that problems have been considered seriously.

Aggression: Most common group of disorders presenting with aggression in this age group have pre-existing mental health problems in the form of pervasive developmental disorder (PDD) in the preschool children, attention-deficit/hyperactive disorder (ADHD) in school aged children and substance intoxication in adolescents.[4] Precipitating factors include separation from the parent, overstimulation or delirium respectively in these groups.

Specific psychiatric disorders, which may present to emergency due to risk of suicide or risk of violence.[5] [6]

Delirium: Prevalence in emergency setup is 7-10% of all visits irrespective of the age. Surgically operated patients and medical inpatients are likely to have higher prevalence of delirium. Disturbance of consciousness with inability to focus attention and change in cognition such as memory deficit, disorientation, or the development of a perceptual disturbance developing over a short duration of time with fluctuating sensorium. Disorientation to time, place and later to person occurs as severity progresses. Other names for this are –Intensive care unit (ICU) psychosis as it develops in those with prolonged stay in ICU, Encephalitis, Encephalopathy, Toxic metabolic state, Cerebral insufficiency, Organic brain syndrome.

Mainly two types of delirium are identified-hypoactive and hyperactive type based on patient's activity level. Presence of illusions, hallucinations, irrelevant talking due to disorientation and memory deficits makes it look like pure psychiatric emergency. Person poses danger to self and others due to delirium.

- Seizure (postictal, nonconvulsive status, status)
- Head trauma, Space occupying lesions of brain, cerebrovascular events
- Metabolic disorder –Eg.,hypoglycemia
- Electrolyte abnormalities and acid-base disturbances because of renal failure, hepatic failure
- Endocrine abnormalities
- Systemic illness Infection (e.g., sepsis, malaria, viral, or abscess)

Table 1.Common causes for delirium

Mental disorders due to brain damage and dysfunction and to physical disease other than delirium: This covers whole range of psychiatric disorders known as organic psychiatric disorders like hallucinosis, mania, depression, anxiety, psychosis and catatonia. All these conditions have an etiological basis which is known to cause such presentation. These psychiatric manifestations are temporally associated with etiology and correction of the underlying etiology leads to remission.

Usual reason for emergency visits is for suicide attempt, aggressive behavior or irrelevant talking secondary to presence of delusions or hallucinations. In these cases cognitive impairment is present. Disorientation or fluctuation of symptoms is not as prominent as seen in delirium.

Personality and behavioural disorder due to brain disease, damage and dysfunction: Individuals with postencephalitic syndrome, postconcussional syndrome may present to emergency mainly because of aggression. There

is associated mild impairment in cognition and are sensitive to antipsychotic side effects.

Mental and behavioural disorders due to psychoactive substance use: This occurs in adolescent group. They appear agitated or confused under intoxication. They may pickup fights with others, or attempt suicide under intoxication. The drug could be alcohol, cannabis, antihistamine, inhalants, amphetamine, LSD (Lyseric acid dietylamide). Once they become dependent on alcohol, sudden cessation may develop withdrawal seizures within first 6-72 hours or may develop delirium tremens. Abuse of above drugs can also cause sleep disturbances, mood disorders, psychotic disorders and anxiety disorders. These are known as substance induced psychiatric disorders and tend to diminish over 2- 4 weeks after cessation of possible substance causing these.

Brought to emergency for abnormal withdrawn behavior, confused or irrelevant talking, suicide attempt, insomnia, excessive drowsiness, tremors of hands, irritability or involving into fighting with others.

History from relevant informants will point towards drug of abuse. In certain cases instant urine strip tests are available and give clues to suspected drug intake. Routine urine screen for drugs detects common drugs of abuse anytime used in the last 3 to 4 days prior to presentation but takes time for procession and analysis.

Psychotic disorders: Psychosis has been defined as presence of either delusion or hallucination or disorganized behavior or catatonic syndrome. There can be a combination of all these to varying extent. Different types of psychotic disorders are –'acute transient psychotic disorder' that occurs following stressor and is of short duration, schizophrenia, delusional disorder and schizoaffective disorder. Those developing psychotic symptoms in addition to a mood disorder also present to emergency, proper treatment for these is little different compared to that for only psychosis.

Sudden onset of abnormal behavior like aggression, running away from home, fearfulness, irrelevant talking, catatonic syndrome, or acute dystonia or akathisia secondary to antipsychotic use are the reasons for seeking emergency department visits.

Manic disorder: It is a mood disorder, predominant change being in feeling state which remains either cheerful or irritable, for more than 2 weeks, with a sense of loss of control over it and characterized by other changes in behavior and thinking. Such children seem hyperactive, there is increased self confidence, decrease in fear for anything, seem very talkative, make excessive demands and adolescents may show social disinhibition, involve in high risk behavior like fast riding vehicles, boastfulness, picking up quarrels with others or into drug experimenting. This is similar to ADHD hyperkinetic–impulsive type, but it has shorter duration of onset, episodic course, there will be family history positive for mood disorder.

Mainly brought to emergency by parents or by police for involving into fight with others, excessive talking, disinhibited behavior or drug intoxication, insomnia and when develops psychotic symptoms, for his abnormal behavior and irrelevant talking.

Depressive disorder: In this mood disorder, predominant change being in the emotional state which is exactly opposite to that seen in mania, having sustained sadness. Along with it, there is change in behavior, decreased interest in activities that were enjoyable earlier, decreased self confidence, negative attitude and negative thinking. They appear tired easily with routine work, activities may appear slow and develop non-specific bodily complaints, difficulty in concentration presenting as memory problem. Some of these children may lose appetite and sleep or others may show atypicality in these like increased food intake, putting on weight, increased sleep duration.

They may be brought to casualty for expressing suicidal ideas or attempted suicide or in a stuporose condition, not speaking, not taking food, staring at one place, assuming voluntary postures for long times, not obeying or doing exact opposite to requests to put even though has good comprehensive capability. This type of presenting syndrome is known as 'catatonia'. They may also develop psychotic

symptoms over already existing depression. This may be the one reason family members bring the child to emergency because he is talking 'irrelevantly' and may think that there is brain damage or under some black magic effect.

Bipolar affective disorder: Bipolar disorder is labeled for those who had in past episodes of mania and depression. Sometimes it is used even for those who have only manic episode. Presentation to emergency is in one of the episode either mania or depression which is described above.

Panic disorder (episodic paroxysmal anxiety): A panic attack is a discrete period of intense fear or discomfort in the absence of real danger that is accompanied by somatic or cognitive symptoms. These symptoms may be palpitations, sweating, trembling or shaking, sensations of shortness of breath or smothering, feeling of choking, chest pain or discomfort, nausea or abdominal distress, dizziness or lightheadedness, derealization or depersonalization, fear of losing control or "going crazy," fear of dying, paresthesias, and chills or hot flushes. The attack has a sudden onset and builds to a peak rapidly (usually in 10 minutes or less).

Panic Disorder is the presence of recurrent, unexpected Panic Attacks and persistent concern of having another attack for at least one month and leading to behavioral changes and impairment in daily routine.

Some fear that the attacks indicate the presence of an undiagnosed, life-threatening illness despite negative medical evaluation results. This may lead to repeated visits to emergency for reassurance. As an attempt to decrease anxiety, some adolescents with panic disorder will use alcohol or drugs. So, another obvious reason for emergency visit is either in intoxicated state or in withdrawal from drugs.

Reaction to severe stress and adjustment disorders-Acute stress reaction: Symptoms similar to PTSD (Post Traumatic Stress Disorder) can occur immediately following extremely traumatic event. Symptoms occur within a month of onset of traumatic event and don't persist beyond one month, if it persists beyond one month diagnosis changes to PTSD. Emotional numbness or being in 'shock' is one of reason for presentation. Repeated nightmares, anxiety attacks or sleep disturbance could be other reasons for bringing to emergency department.

Dissociative [conversion] disorders: The common theme shared by dissociative (or conversion) disorders is a partial or complete loss of the normal integration between memories of the past, awareness of identity, immediate sensations, and control of bodily movements. Here children present with sudden onset of symptoms suggestive of serious neurological condition. This can manifest as either one of these complaints or combination of these complaints- sudden loss of speech, sudden inability to move a limb, sensory loss over limb, sensory loss in the half of the body for all modalities, loss of consciousness appearing as stuporose, having movements like generalized seizures. Lack of risk factors, and on examination absence of consistent neurological findings, presence of certain precipitating factors or stressors may be evident. There are certain maneuvers and tips to diagnose dissociated disorders.

Trance and possession disorders-Child shows altered episodes of behavior characterized by certain repeated ritualistic acts and repeated similar utterances or saying dialogues as if possessed by deity, or spirit. If this occurs under culturally sanctioned settings then it is not considered abnormal, for example occurring in temple in Indian context doesn't qualify for mental disorders. Another differential diagnosis is temporal lobe epilepsy.

Sleep terrors [night terrors]: This is characterized by abrupt awakenings from sleep usually beginning with a panicky scream or cry. It usually begins during the first third of the major sleep episode. The episodes are accompanied by autonomic arousal and behavioral manifestations of intense fear. During an episode the individual is difficult to awaken or comfort. After awakening immediately after the sleep terror, no dream is recalled, or only fragmentary, single images are recalled.

Nightmares: Nightmares typically occur in a lengthy, elaborate dream sequence that is highly

Condition	Test	dissociative Findings
Anesthesia	Map dermatomes	Sensory loss does not conform to recognized pattern of distribution
Astasia-abasia	Walking, dancing	With suggestion, those who cannot walk may still be able to dance; alteration of sensory and motor findings with suggestion
Paralysis, paresis	Drop paralyzed hand onto face Hoover test	Hand falls next to face, not on it Pressure noted in examiner's hand under paralyzed leg when attempting straight leg raising
Coma	Examiner attempts to open eyes Ocular cephalic maneuver	Resists opening; gaze preference is away from doctor Eyes stare straight ahead and do not move from side to side
Aphonia	Request a cough	Essentially, normal coughing sound indicates that cords are closing
Severe bilateral blindness	"Wiggle your fingers, I'm just testing coordination" "Look at your hand" "Touch your index fingers"	Patient may begin to mimic new movements before realizing the slip Patient does not look there Even blind patients can do this by proprioception

Table 2. Distinctive Physical Examination Findings in dissociative Disorder[1]

anxiety provoking or terrifying. Dream content most often focuses on imminent physical danger to the individual (e.g., pursuit, attack, injury). On awakening, individuals with this disorder can describe the dream sequence and content in detail there is mild autonomic arousal. Individuals may report multiple nightmares within a given night, often with a recurrent theme. Nightmares arise almost exclusively during rapid eye movement (REM) sleep. Repeated nightmare can occur as a part of separation anxiety disorder, wherein children fear separation from significant attached family member (usually one parent) and fear of something bad happenings with them which may separate them forever.

Recurrent nightmares during which the traumatic event is relived along with difficulty falling or staying asleep, hyper vigilance, and exaggerated startle response may occur as part of post traumatic stress disorder (PTSD). Such children may also report irritability or outbursts of anger or difficulty concentrating or completing tasks.

Mental retardation: Essential feature is below average general intellectual functioning. They can present to emergency for behavioral problems like uncontrolled aggression. This may be a part of mental retardation or secondary to

another associated with psychiatric disorder in these children and adolescents like pervasive developmental disorders, stereotypic movement disorders, ADHD, delirium, intoxication, psychosis, mania. Those with depression may present like refusal to feed, decreased interaction, suicidal ideation or stuporose condition or catatonia.

Pervasive developmental disorders: These include Autistic disorder, Rett's disorder, Childhood disintegrative disorder, Asperger's disorder. Associated features are mental retardation varying from mild to profound, seizures, non-specific neurological signs.

Main reason for presentation to emergency is for increased self injurious behavior or non specific aggression or stereotypic behavior and repetitive use of language or idiosyncratic language. The last one is characterized by body movements which are repetitive, seemingly driven, and nonfunctional motor behavior that markedly interferes with normal activities and at times may result in bodily injury.

Any recent deterioration in level of functioning calls for medical and neurological evaluation. EEG may be abnormal even in absence of seizure disorders.

Attention Deficit/Hyperkinetic Disorders (ADHD): Three subtypes have been recognized-hyperkinetic-impulsive type, inattentive type and combined type, last one being most frequent. Main reason for seeking emergency visits is for not able to sleep, increased aggression, restlessness. Other reasons can be substance intoxication or drug overdose or abnormal dystonic reactions secondary to psychotropics.

Conduct disorders: It is usually associated with ADHD. Main presentation is either brought by police or parents for involving into fight with others or found in altered state in intoxication state. Usually these are dealt by parents at their level or police hand over them to social welfare organization or send to juvenile remand homes. There is history dating many months or years of repeated lying, threatening other people with knife, bullying, stealing, truancy, shoplifting and cruelty to animals. Recent onset of such behavior in children after stressful event should raise the suspiciousness of adjustment disorders or depression.

Catatonic syndrome: It is a syndrome with characteristic signs and symptoms having wide etiological basis. In this state child or adolescent may appear stuporose with minimal or no interaction with surrounding or family members, with mutism, staring at one place, reduced self care, rigidity of muscles on attempting to move limbs passively, there can be resistance to follow even simple commands or may do exactly opposite of what is told to do (negativism) or waxy flexibility can be present (condition in which a person maintains the body position into which they are placed).

It may be due to neurological conditions like cerebrovascular accidents, cerebral infections, conditions associated with derangements in general medical condition, can also occur as part of psychotic disorders or mood disorders.

Psychotropic induced adverse effects presenting to emergency

Acute dystonia: The prevalence varies widely—from 2% to 90%.[1] sudden involuntary sustained contraction of group of skeletal muscles occurs most commonly involving neck, jaw and tongue muscles. There can be involuntary up rolling of eyeballs, difficulty in speaking or strider (due to involvement of laryngeal muscles) or labored breathing (due to involvement of diaphragm). Appears very threatening and there painful twisting or bending of body posture. This usually follows administration of antipsychotics (mainly atypical antipsychotics haloperidol) or selective serotonin reuptake inhibitors. Sometimes antidopaminergic agents used for treatment of nausea and vomiting in children like metoclopromide.

Akathisia: Recent onset increased feeling of inner restlessness associated with inability to sit quietly at one placeand need to pace around. If this is occurs within few weeks of starting or escalating psychotropics commonly antipsychotics and antidepressants, is called akathisia. This can be highly distressing leading to suicide or aggression in some children.

Pseudoparkinsonism: Children and adolescents can present to emergency with features of slowness in spontaneous movements, masked faces, tremors of hands at rest,

sialorrhoea, reduced blinking and rigidity of limbs following few days of treatment with antipsychotics.

Management of psychiatric emergencies in children and adolescents

Management of violence risk: Most child and adolescent emergency visits occur for aggressive or suicidal threats or behavioral problems brought usually by caretakers as last resort. Medical and brief neurological evaluation is a must in all presentations with known or unknown psychiatric diagnosis. First and foremost is ensuring safety of patient, others and self. Interviews should be conducted in a space that will allow some degree of privacy, less stimulation and devoid of sharp instruments. In the Mental status examination look for - disorientation, confusion, and fluctuating levels of consciousness, incoherence of thought or speech, evidence of hallucinations or delusions, impaired memory, slurred speech, ataxia, or apraxia. There is no standard way to predict violence but assessment of safety requires explicit attention to the following during mental status examination- presence of suicidal or homicidal ideation, aggressive threats or ideation, impulsivity, proneness to agitation during the interview, poor judgment, poor insight and limited intelligence.

Levels of violence or aggression can be categorized based on presentation and appropriate interventions can be taken. [2]

Level 1: presentation is mainly in the form of oppositional behavior, verbal abuse, then intervention required is none or minimal and allow autonomy.

Level 2: presentation is with distress, anxiety, agitation, property damage and non-specific threats then it requires decreasing stimulation and specific symptom based medication. Choice of oral medication either sedative or antipsychotic given under restraint before giving injection and restraint released after verbal contract by the child to remain calm.

Level 3: evidence of aggression directed at self or others both verbal and physical. It requires medication oral or intramuscular either sedative or antipsychotic and seclusion or restraint. Usually chemical restraint is preferred.

Chemical Restraint: Antipsychotic and/or benzodiazepines are the most commonly used agents. Haloperidol and lorazepam are perhaps the most commonly used agents and are available in most pediatric emergency departments. Lorazepam has a relatively short half-life (10 to 20 hours) and produces no active metabolites. Dosing in children ranges from 1 to 2 mg orally or intramuscularly every hour until sedation is achieved.

Haloperidol is a high-potency antipsychotic that has been has been shown to be more efficacious than lorazepam in controlling violent behavior. Haloperidol may be given in doses of 2 to 5 mg intramuscularly or orally. The dose may be repeated in 1 hour if necessary to achieve calmness.

Some pediatric settings use the antihistamine diphenhydramine, promethazine for sedating agitated, nonpsychotic pediatric psychiatric patients. If an antipsychotic is used, the physician should also consider the prophylactic administration of diphenhydramine or promethazine 25 to 50 mg per dose, or trihexyphenidyl (Pacitane) 1 to 2 mg, to prevent acute dystonic side effects, while taking into account any other anticholinergic drugs the patient is receiving. In general, intramuscular injection has a faster onset of action than oral medication.

Physical Restraint: Physical restraints must be used only when less restrictive measure have been found to be ineffective in preventing risk of harm to self or others. Monitor the child continuously and to assess for restriction of airway, change in breathing pattern, decreased circulation, or increased body temperature when under physical restraint. Review the patient and evaluate the need for restraint within 1 hour after the initiation of this intervention. Reassess every 2 hours for a child aged 9 to 17 years and every hour for a child less than 9 years old. When a child shows behavioral control and can verbally contract for safety, he or she must be removed from restraints.

Management of suicide risk: If the adolescent has risk factors suggestive towards suicide chance appropriate steps taken to prevent it even

before he is referred to psychiatric services. It involves informing the parents or close relative to keep 24 hour vigilance, not to allow going out alone, not to lock inside from bathroom or toilet while one person waits outside as guard, no sharp instruments near reach, supervised medications and keeping away medications out of reach. At times short admission in protective environment like that of hospital might help to tide over the crisis.

Management of delirium: Antipsychotic injectible for acute management, haloperidol 2.5 mg intramuscular and later oral antipsychotic is prescribed as long as delirium persists. It only helps in symptomatic reduction of agitated behavior and perceptual abnormalities associated with delirium. Delirium is a medical emergency and main treatment lies in identifying the underlying cause and correcting it. Delirium poses high risk for mortality which is more than 20% in emergency setup.

If it is caused by intoxication of drugs of abuse, one has to wait till drug effect wanes out and to provide safety till orientation returns or confusion clears. If it is due to drug withdrawal like alcohol withdrawal substitution with benzodiazepines (lorazepam is safe in case of suspected liver dysfunction) will clears delirium. Referral to psychiatry which usually runs deaddiction services is required.

Management of dissociative disorder: Rule out organic or medical causes. Reassure and can be kept for observation for few hours and mild sedative can be used. Assessment of stressor, building alternate coping skills is done by child psychiatrist.

Management of insomnia and night terror/ nightmare: Insomnia is of few days and is of non-organic cause, prescribing benzodiazepines is done along with advice on sleep hygiene. Same may help for those with night terrors and nightmare. Benzodiazepine use should not exceed beyond 8 weeks and specific treatment for associated psychiatric disorder needs to be instituted. Dose required can vary from clonazepam or lorazepam 0.5mg to 2mg. Some children may have paradoxical awakening with these and if such history is present avoid benzodiazepine, give non-benzodiazepine sleeping medications like Eszopiclone 1mg, or Zolpidem 6.25mg at night.

Management of psychotropic induced acute dystonia and pseudoparkisnonism: Promethazine (Phenergan) 25 mg to 50 mg or Biperiden 5 mg should be administered intramuscularly to treat the condition; this is nearly always effective within 20 minutes. Then daily oral anticholinergic trihexyphenidyl (Pacitane/Parkin) 2mg can be instituted for next 4 days if offending drug can't be withdrawn. Those with risk factors for acute, drug induced dystonia include young age, male sex, use of stimulants, and a history of acute dystonia, acute psychosis may require additional prophylactic anticholinergic during the first four to seven days of starting treatment with antipsychotics. With this regimen even pseudoparkinsonism due to antipsychotics can also be treated.

Management of psychotropic induced akathisia: This is dose related side effect and can be reduced with decreasing the dose if possible and for acute management use propranalol 20 mg to 80mg per day in divided doses if there is no contraindication. This resembles like psychotic agitation, secondary to exacerbation of psychotic symptoms but increase in antipsychotic will only worsen the condition.

Conclusion

Even in specialized pediatric hospitals, residents often have little training or comfort in handling child behavioral health emergencies. Preoccupied with large numbers of seriously ill, children and adolescents presenting with psychiatric emergencies may appear to the medical and nursing staff as disruptive, uncooperative, or unpleasant, who take time and resources away from the 'truly medically ill patients.' If the hospital-based pediatric emergency services have to go beyond just providing a triage function for the increasing volume of emotionally disturbed youth seen, it will be essential to develop more effective, rigorously evaluated acute interventions and means of linking the pediatric emergency services to other health care services. Children discharged from the emergency should have recommendations for outpatient follow-up.

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