Psychiatric Emergencies

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Introduction

- A psychiatric emergency is an acute disturbance of behavior, thought or mood of a patient which if untreated may lead to harm, either to the individual or to **others in the environment.**

Major emergencies :

- Suicide
- Agitated and violent patients.

- **Medical emergencies in psychiatry:**
- Deliriums due to life threatening conditions.
- Neuroleptic malignant syndrome.
- Serotonin syndrome.
- Over dosages of common psychiatric medications.
- Over dosages and withdrawal from addicting substances

- **Minor emergencies**
- Grief
- Panic attacks.

- ***SUICIDE** is a MAJOR public health problem in EVERY COUNTRY AND COMMUNITY WORLDWIDE.*

- ***TREATABLE , MODIFIABLE , PREVENTABLE** CAUSE OF DEATH.*

- SUICIDE:
- Death caused by selfdirected injurious behavior with an INTENT TO DIE as a result of the behavior.
- SUICIDE ATTEMPT:
- Self-injurious behaviour with a non fatal outcome accompanied by explicit or implicit evidence that the person is INTENDED TO DIE.

- The American Center for Disease Control and Prevention (CDC) defines an attempt as follows: "A suicide attempt is when someone harms themselves with any intent to end their life, but they do not die as a result of their actions."

- SUICIDAL INTENT:
- Subjective expectation and desire for a self – destructive act to end in death.
- LETHALITY OF SUICIDAL BEHAVIOUR:
- Objective danger to life associated with a suicide method or action.
- SUICIDAL IDEATION:
- occurrence of passive thoughts about wanting to be dead or active thoughts about killing oneself.

- Non-suicidal self-injurious behaviour (NSSI):

Is a 'direct and deliberate destruction of one's own body tissue in the ABSENCE OF SUICIDAL INTENT'

- Worldwide, more than 800,000 people die due to suicide each year.
- Suicide accounts for 1.4% of all deaths, and is the 15th leading cause of death globally .
- In 15-29 years 2nd leading cause of death.
- Suicide attempts occur 8-10 times more frequently than completed suicide.
- The estimated global annual prevalence of self-reported suicide attempts is approximately 3 per 1,000 adults. •
- It is estimated that about 1.5 million people will die due to suicide by the year 2020.

INDIAN SCENARIO

- A total of **1,34,516 suicides** were reported in the cou during **2018** showing an **increase of 3.6%** in comparison 2017.

YEAR	TOTAL NO.OF.SUICIDE	RATE OF SUICIDE
2017	**1,29,887**	**9.9%**
2018	**1,34,516**	**10.2%**

- The rate of suicides has increased **by 0.3% during 2018** c 2017.

National Crimes Records Bureau, Accidental Deaths and Suicides in India, New Delhi: Ministry of Home Affairs, Governm

RISK FACTORS

BOX 1. Psychosocial risk factors for nonsuicidal self-injury

Child maltreatment
- Sexual abuse
- Physical abuse
- Emotional abuse
- Neglect

Parental drug/alcohol use

Exposure to domestic violence

Parental mental health concerns
- Mental retardation/low functioning
- Anxiety
- Depression
- Other diagnosis

Poverty

BOX 2. Risk factors for suicidal behavior
adolescents who engage in nonsuicidal s

Strong and moderate correlates
- Increased NSSI longevity
- Increased NSSI frequency
- Higher number of methods of NSSI empl
- Increased severity of NSSI methods empl cutting vs. hair pulling)
- Borderline personality disorder
- Hopelessness/depression
- Impulsivity
- Posttraumatic stress disorder
- Other mental health diagnosis
- Sexual and physical abuse

Note. *NSSI, nonsuicidal self-injury.*
Data from Victor and Klonsky (2014).

Victor and Klonsky 2014

K FACTORS

SUICIDE RISK ASSESMENT

Modifiable or Dynamic Risk factors

- Depressive Symptoms
- Psychotic Symptoms
- Cognitive Impairment
- Poor Insight
- Impaired Judgement
- Substance Use
- Impulsivity
- Experiences of Adversity
- Non compliance

Unmodifiable / static Risk factors

- Age (Increasing age)
- Gender (Males>Females)
- Poor Socio-Economic strata
- History of Previous Attempts
- Personality Disorders

Rodav et al., 2014

ASSESSMENT OF SUICIDE RISK

- Understand the motivation
- No definitive empirically based approaches to predi suicide risk
- Suicide risk is known to **fluctuate**
- The limits of confidentiality best discussed at the interview

COMPONENTS OF A RISK ASSESSMENT INTERVI

1. Predisposition To Suicidal Behaviour
2. Identifiable Precipitant Or Stressors
3. The Patient's Symptomatic Presentation
4. Presence Of Hopelessness
5. Nature Of Suicidal Thinking
6. Previous Suicidal Behavior
7. Impulsivity And Self-control
8. Protective Factors.

NATURE OF SUICIDAL THINK

1. Current ideation **frequency,intensity,du**
2. Suicidal plan
3. Availability & lethality means
4. Active suicidal behavio
5. Explicit suicidal intent

Klonsky ,May,Saffer. Suicide, Suicide Attempts, and Suicidal Ideation Annu. Rev. Clin. Psychol. 2016; 12:3

MENTAL DISORDERS

- Around 93% of suicide attempters were found to be psychiatrically ill at the t commission of suicide attempt. Adinkrah et al., (2013).
- **Co-morbidity** has been associated with **increasing risk** of suicide attempt.

Developed countries	Developing countries
•BPAD •PTSD •MDD	•PTSD •Conduct disorder •Drug abuse/dependence

- **STRONGLY PREDICT A SUBSEQUENT SUICIDE ATTEMPT**

GOALS OF RISK ASSESSMENT

Upon the completion of a risk assessment a clinician :

1. **Is not expected to be able to predict the future**
2. Will develop a judgment about a patient's current level of risk
3. Respond accordingly in the interest of the patient's safety.

This may include:

1. Referral for inpatient treatment
2. Increased monitoring as an outpatient
3. Engagement of the support group
4. Plan regarding procedures to be implemented if the patient becon suicidal

Klonsky ,May,Saffer. Suicide, Suicide Attempts, and Suicidal Ideation Annu. Rev. Clin. Psychol. 2016; 12:3

Treatment

- INPATIENT:
- indicated in case of high risk of suicide like after a suicide attempt if patient is
- Psychotic
- Attempt was lethal and violent
- Persistent plan or still the intent is present
- Current impulsive behavior ,poor judgement, or refusal of help is evident.
- If patient has change in mental status which require further workup.
- OUTPATIENT:
- In low risk conditions like
- Patient has chronic suicidal ideation/attempts without serious attempts
- If safe and supporting living situations are avaiable.

LEGAL IMPLICATION

PAST	CURRENT SCENARIO
Sec 309 IPC, "**If any person dies by suicide, whoever abets the commission of such suicide, shall be punished with imprisonment of either description for a term which may extend to 10 years, and shall also be liable to fine.**"	According to the Section 115 of Healthcare Act (MHCA), 2017, **attempters are presumed to have severe stress, not to be punished government should have d provide care, treatment, rehabilitation to reduce the recurrence.**

Decriminalization might lead to openly seeking help, improvement in epidemiological data, better planning, and resource allocation.

resource allocation.

SUICIDE PREVENTION PROTOCOL

CHECKLIST

TASK	YES	NO
Informed consent taken.		
Initial evaluation within 6 hours.		
Patient is nursed in a designated area withi close observation.		
Ensure that no sharp objects/ weapons/belts/long clothes are kept near vicinity of the patient.		
Ensure that attendant stays with the patient throughout the course of the patient.		
Patient to have food under supervision.		
All the medications to be administered under supervision of the staff.		
A care taker or the nursing staff should accompany the patients for toilet needs and the patient should not be allowed to latch toilet and bathroom doors.		

Signature (Psychiatrist)

Signature (Nursing staff)

Signature (Patient attender)

5 Myths and Facts About Suicide

Myth #1:

- People who talk about killing themselves rarely commit suicide.

Fact:

- Most people who commit suicide have given some verbal clues or warnings of their intentions

5 Myths and Facts About Suicide

Myth #2:

- The suicidal person wants to die and feels there is no turning back.

Fact:

- Suicidal people are usually ambivalent about dying; they may desperately want to live but can not see alternatives to problems.

5 Myths and Facts About Suicide

Myth # 3:

- If you ask someone about their suicidal intentions, you will only encourage them to kill themselves.

Fact:

- The opposite is true. Asking lowers their anxiety and helps deter suicidal behavior. Discussion of suicidal feelings allow for accurate risk assessment.

5 Myths and Facts About Suicide

Myth # 4:

- All suicidal people are deeply depressed.

Fact:

- Although depression is usually associated with suicide, not all suicidal people are obviously depressed. Once they make the decision, they may appear happier/carefree.

5 Myths and Facts About Suicide

Myths # 5:

- Suicidal people rarely seek medical attention.

Fact:

- 75% of suicidal individuals will visit a physician within the month before they kill themselves.

SOMATIC TREATMENTS

ECT	Evidence for short-term reduction of suicide, but not long-term.
Benzodiazepines	May reduce risk by treating anxiety
Antidepressants	A mainstay treatment of suicidal patients with depressive illness / symptoms. No conclusive evidence of suicide reduction
Lithium and Anti-convulsants	Lithium has a demonstrated anti-suicide effect; anticonvulsants do not
Antipsychotics	Evidence for Clozapine reducing suicidality in schizophrenia and schizo-affective disorders

Myths about ECT

- 1. It is a barbaric treatment.
- 2. It causes brain damage.
- 3. It causes permanent memory loss.
- 4. It is a treatment of last resort.
- 5. It only works for depression.
- 6. It is not safe.
- 7. It cannot be given to patients with epilepsy.
- 8. It will change one's personality.
- 9. Its success rate is low.
- 10.It is a permanent cure.

- **Myth: ECT is given to make people forget everything.**
- **Fact:** Temporary forgetfulness is a side-effect of ECT which is mostly mild, reversible and limited to recent events. The ability to remember will remain intact after ECT course is completed.
- **Myth: If someone gets admitted in a psychiatric hospital, they would be given ECT without their knowledge.**
- **Fact:** ECT is always given after the doctor discusses with the patient and the family and only when they agree to it.
- **Myth: ECT experience is painful and horrifying.**
- **Fact:** ECT is given under anaesthesia and so the patient does not feel pain or electric shock.

- **Myth: ECT causes brain damage and may reduce the intelligence or change the personality.**
- **Fact:** ECT does not cause brain damage. It may cause temporary memory lapse of events around the course of ECT. ECT does not affect personality or overall intelligence.
- **Myth: ECT is given as a punishment.**
- **Fact:** ECT not a punishment. It is a medical procedure administered to treat a person's psychiatric condition. Moreover, it is not a painful procedure.
- **Myth: If ECT has been suggested by the doctor, it means that other treatments are not working and the condition is hopeless.**
- **Fact:** ECT is generally suggested by the doctors as, among the available options, it is the best for that patient at that moment. If one does not wish to receive ECT, doctors would suggest the next best option.

ECT: Perception versus Reality

ECT is often dramatized in popular culture and media.

Source: Still from One Flew Over the Cuckoo's Nest

In practice, ECT has a long history as a treatment for the most severe cases of mental illness.

Source: Affinity Magazine

- Crisis intervention centres and helplines are available in most cities all over the world. They provide an avenue for the person contemplating suicide to ventilate his problems and enable the counsellor to persuade the patient to seek professional help.

Psychiatric disorders associated with violent behavior

- Schizophrenia especially paranoid.
- Mania.
- Personality disorder especially antisocial type.
- Alcohol intoxication or withdrawal.
- Substance intoxication with cocaine, amphetamines, anabolic steroids, phencyclidine.
- Substance withdrawal.
- Post traumatic stress disorder

Medical disorders associated with violent behaviour

- **Neurologic illnesses:**
- Brain infections such as encephalitis, meningo encephalitis
- Head injury with intracerebral, subarachnoid or subdural haematoma
- Cerebral infarction
- Seizure disorders (interictal, post ictal or temporal lobe epilepsy)
- Hepatic encephalopathy
- Huntington's disease
- Parkinson's disease due to levodopa toxicity
- Wilson's disease

- **Endocrinopathies**
- Thyrotoxicosis
- Hypothyroidism
- Cushing's syndrome
- Hyper parathyroidism.

- **Metabolic disorders**
- Hypoglycemia
- Hypoxia
- Electrolyte imbalance

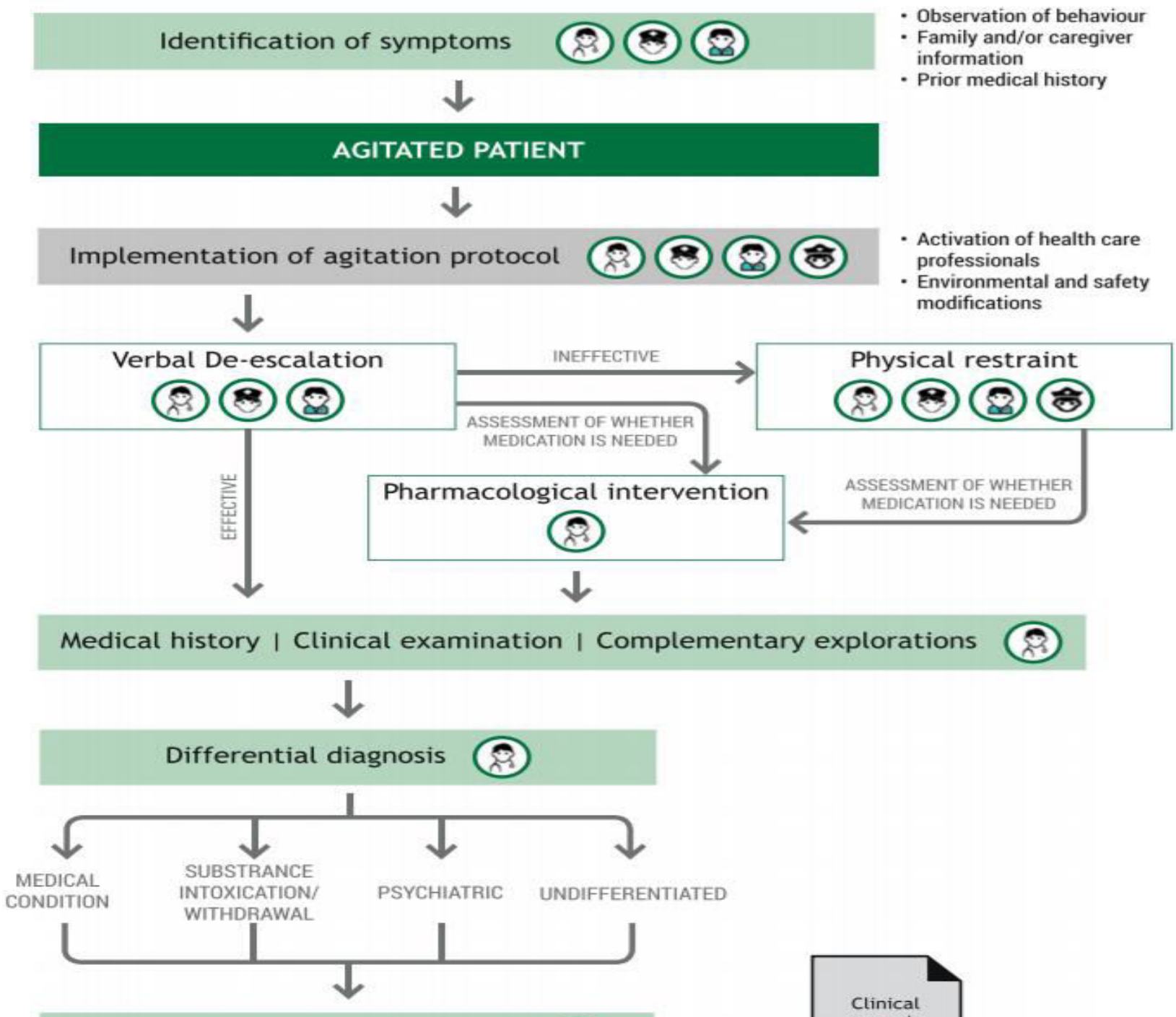
- **Infections**
- AIDS
- Syphilis
- Tuberculosis

- **Vitamin deficiencies**
- Folic acid
- Niacin
- Pyridoxine
- Vitamin B 12

- Medications :
- Steroids.
- Chloroquine
- Quinine
- Acyclovir.
- Dopamine
- Atropine

Table 1 Signs and symptoms of psychomotor agitation [2]

Type	Signs and Symptoms
Changes in behaviour	• Combative attitude • Inappropriate behaviour without clear purpose • Hyperreactivity to stimuli • Inability to remain quiet, seated or calm • Exaggerated gesticulation • Facial tension and angry expression • Defiant and/or prolonged visual contact • Raised tone of voice, silence or refusal to communicate • Altered emotional state with appearance of anxiety, irritability or hostility • Verbal and/or physical aggression against self or others or objects
Cognitive changes	• Fluctuations in the levels of consciousness • Temporo-spatial disorientations • Tendency to frustration • Difficulty in anticipating consequences • Delusional ideas and/or hallucinations
Change in physical parameters	• Fever • Tachycardia • Tachypnoea • Sweating • Tremor • Neurological signs such as difficulty walking

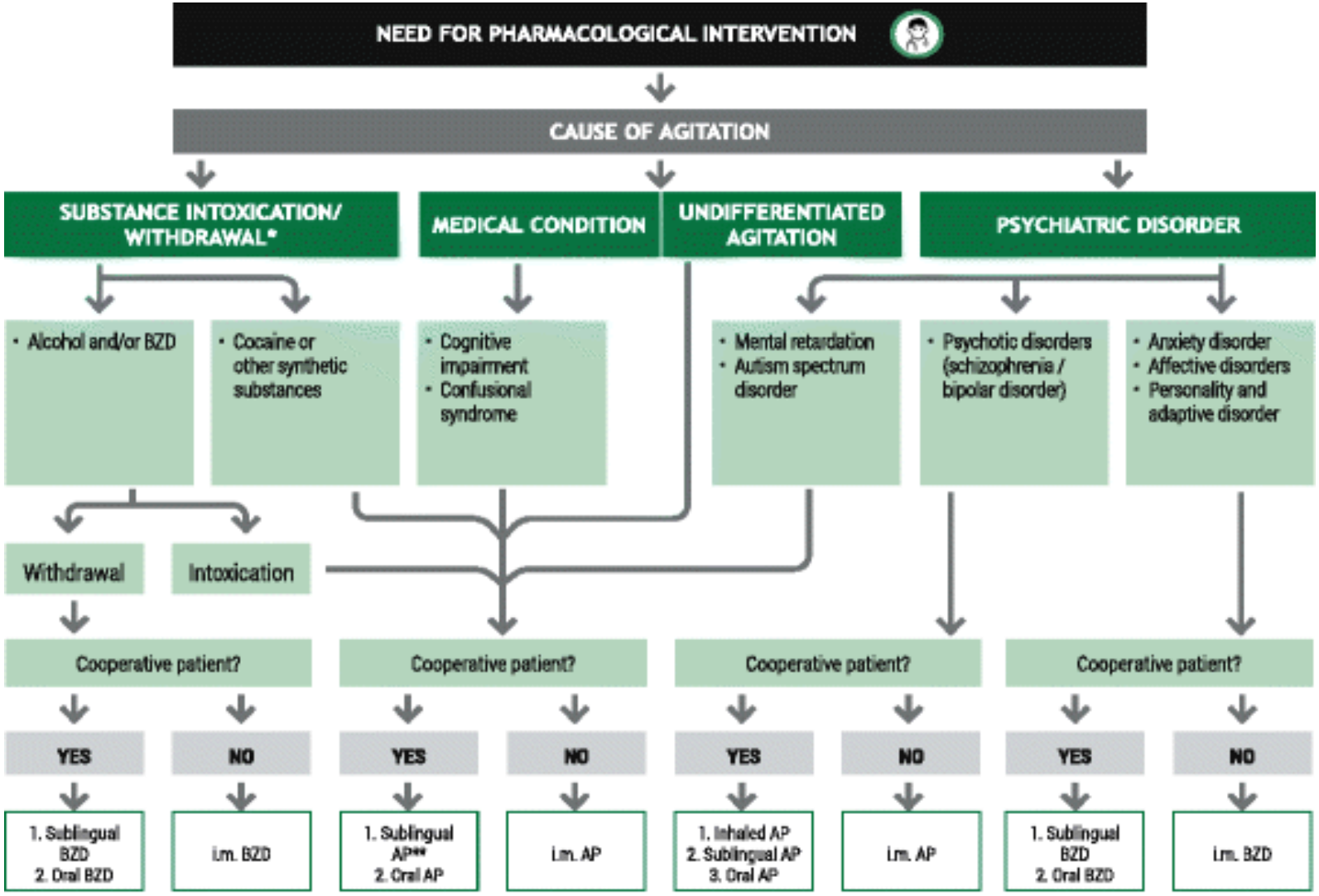

Identification of symptoms
• Observation of behaviour
• Family and/or caregiver information
• Prior medical history
AGITATED PATIENT
Implementation of agitation protocol
• Activation of health care professionals
• Environmental and safety modifications
Verbal De-escalation
INEFFECTIVE
Physical restraint
ASSESSMENT OF WHETHER MEDICATION IS NEEDED
EFFECTIVE
Pharmacological intervention
ASSESSMENT OF WHETHER MEDICATION IS NEEDED
Medical history | Clinical examination | Complementary explorations
Differential diagnosis
MEDICAL CONDITION
SUBSTRANCE INTOXICATION/ WITHDRAWAL
PSYCHIATRIC
UNDIFFERENTIATED
Clinical

Strategies to prevent assault

- Answer all questions softly, simply and honestly
- Be empathic and calm
- Keep hands visible
- Keep the door open
- Stay at least an arm's length away from the patient
- Stay to the side of the patient
- Use non threatening body language
- Use reflective statements rather than judgmental ones.
- Donot confront, use simple language

Restrains

- 5 or minimum 4 persons are required
- Leather restrains are safest
- A staff member should always be visible and give reassurance to the patient
- Pt to be restrained with legs eagled and one arm restrained to one side and other arm restrained over patients head
- Restrains should be placed so that iv fluids can be given.
- After patient is under control, one restrain at a time should be removed at 5 minute interval until the patient has only 2 restrains.
- Both other restrains are removed at the same time because it is not advisable to keep on one restrain



BZD = Benzodiazepines; AP = Antipsychotics; i.m. = intramuscular

* In case of combined intoxications (i.e.: cocaine + alcohol), the treatment should be decided depending on the acceptable risk

** Use of inhaled AP should be considered in cooperative patients that require rapid effects

Overdose of prescribed psychoactive drugs:

- It can also pose a threat to life apart from causing intoxication. Hence, the patient should be jointly managed by a physician and a psychiatrist.
- If the patient has taken a toxic dose and is awake, treatment consists of inducing emesis followed by administering activated charcoal. Overdose with tricyclic antidepressants or carbamazepine requires cardiac monitoring.
- Overdose with barbiturates or benzodiazepines and alcohol may cause respiratory arrest.
- Antipsychotic drugs, at therapeutic as well as toxic doses, can cause acute extrapyramidal adverse effects including dystonia, oculogyric crisis, torticollis, and akinesia.
- Akathisia is a common adverse effect of high-potency antipsychotics, when severe, it is accompanied by extreme anxiety or terror. Acute onset of oculogyric or orofacial dystonia in an otherwise healthy person may suggest purposeful or inadvertent ingestion of an antipsychotic.
- Immediate relief may be provided with a parenteral antihistaminic such as promethazine 25 mg IM.

Anti psychotics

Adverse events

- CNS: Drowsiness, lethargy, mental confusion, weight gain (not with haloperidol), aggravation of seizures in epileptics.
- CVS: Postural hypotension, palpitation, inhibition of ejaculation (especially with thioridazine) are due to a adrenergic blockade; Q-T prolongation and cardiac arrhythmias are risk of overdose with thioridazine, pimozide and ziprasidone.
- Anticholinergic Dry mouth, blurring of vision, constipation, urinary hesitancy in elderly males.
- Endocrine Hyperprolactinemia (due to D2 blockade) is common with typical neuroleptics and risperidone. This can lower GH levels, but amenorrhoea, infertility, galactorrhoea and gynaecomastia occur infrequently after prolonged treatment.
- Metabolic effect: Elevation of blood sugar and triglyceride.

Tricyclic antidepressants (TCAs) -Introduction

- Potentially fatal (2.5 to 3.5g of amitriptyline)
- Neurological and cardiac problems common
  - Toxicity due to anticholinergic actions, and direct quinidine-like effect on the myocardium
- Serious toxicity results from:-
  - Ventricular dysrhythmias
  - Seizures
  - Hypotension
  - Respiratory depression
- Initial symptoms at presentation may be trivial, and most major problems occur within 6hrs

Selective Serotonin Reuptake Inhibitors (SSRis)

Overdoses:

- Large intakes of SSRIs do not cause cardiac arrhythmias (compared to the arrhythmia risk for the TCAs), but seizures are a possibility because all antidepressants may lower the seizure threshold.
- All SSRIs have the potential to cause a serotonin syndrome that may include the symptoms of hyperthermia, muscle rigidity, sweating, myoclonus (clonic muscle twitching), and changes in mental status and vital signs when used in the presence of a MAOI or other highly serotonergic drug.
- Therefore, extended periods of washout for each drug class should occur prior to the administration of the other class of drugs.

Table 1 – Common signs and symptoms of delirium

- Disturbed attention and awareness
- Reduced level of alertness or arousal
- Acute onset and fluctuating course
- Fragmented sleep
- Disordered thought process
- Disorientation to time and place
- Executive dysfunction
- Memory impairment
- Visuospatial deficits
- Abnormalities of language
- Psychomotor agitation or retardation
- Reality distortion, including illusions, hallucinations, and delusions
- Labile affect
- Asterixis
- Frontal release signs

CLINICAL VARIANTS

1. **Hyperactive**
   - Restless/agitated - Aggressive/hyper-reactive
   - Autonomic arousal - 15-47% of cases
2. **Hypoactive**
   - Lethargic/drowsy
   - Apathetic/inactive
   - Quiet/confused
   - Often escapes diagnosis
   - Often mistaken for depression
   - 19-71% of cases
3. **Mixed**
   - 43-56% of cases

NON-PHARMACOLOGICAL MANAGEMENT

- Assess safety
  - Prevent harm to self or others
  - Try to avoid physical restraints
- Establish physiological stability
  - Adequate oxygenation
  - Restore electrolyte balance
  - Restore hydration
- Address modifiable risk factors
  - Correct sensory deficits
  - Manage pain
  - Support normal sleep pattern

NON-PHARMACOLOGICAL MANAGEMENT…

Optimize communication

- Continuous monitoring of mental status
- Calm, supportive approach
- Avoid confrontation
- Use re-orientation strategies
  Clock, calendars
- Provide staff consistency
- Involve friends/family
- Promote meaningful activities
- Provide education about delirium

NON-PHARMACOLOGICAL MANAGEMENT…

- **Support routines**
- **Encourage self care**
- **Optimize environment**

  Avoid sensory deprivation and overload
  Minimize noise to promote normal sleep pattern

  Provide appropriate lighting

  Provide familiar objects

- **Evaluate response to management**

Management (of HYPERactive and HYPOactive Delirium):

- Behavioral management (see top of page)
- **Identify & treat UNDERLYING CAUSE w/ special attention to life-threatening conditions** (see *Altered Mental Status*)
- **Daily EKG to monitor QTc (<550msec);** Daily repletion of K>4 & Mg>2 (in anticipation of pharmacotherapies)

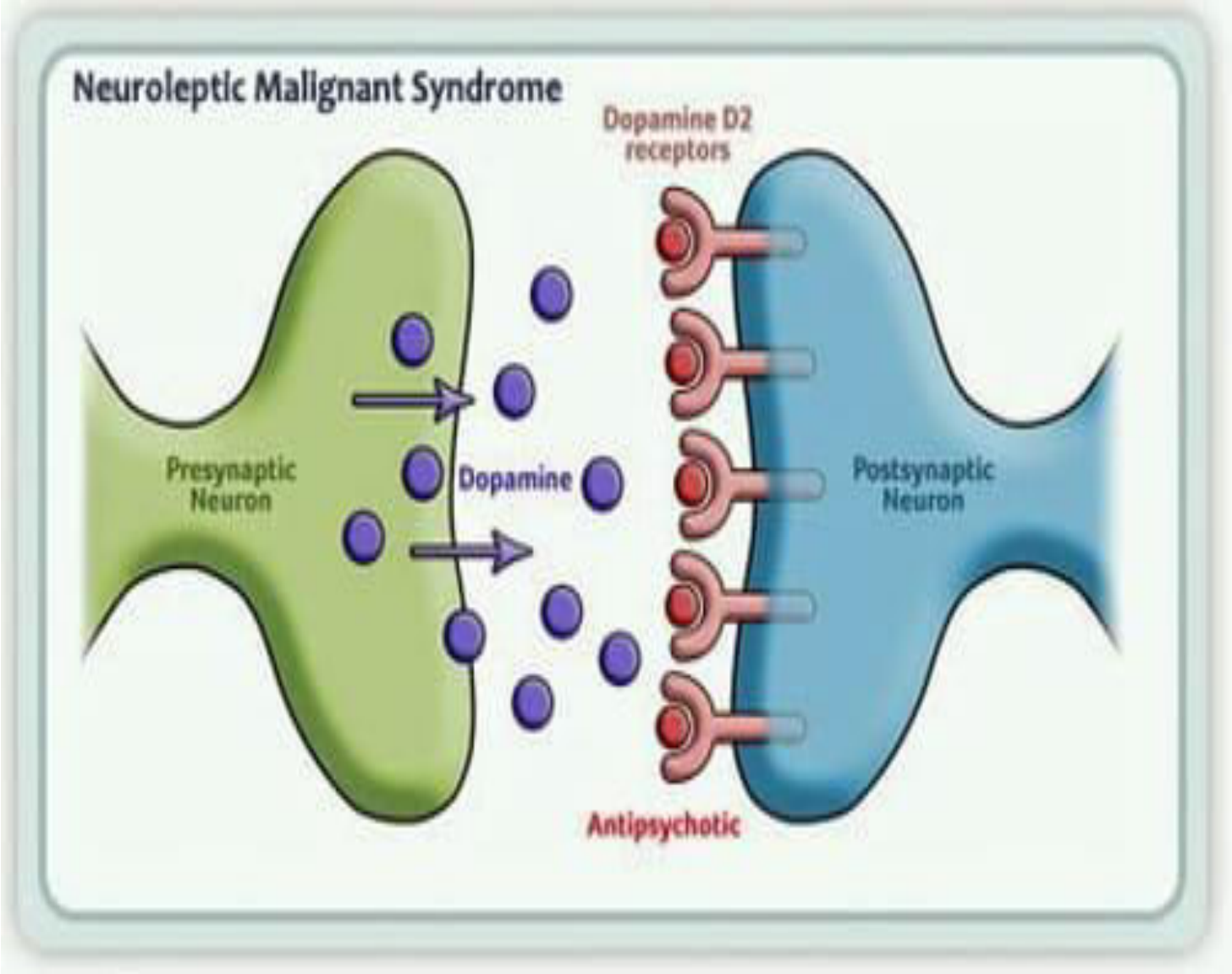
Medication Management (for dangerous behavior ONLY): 1:1 sitter (re-orients) >> meds >> restraints (deliriogenic)

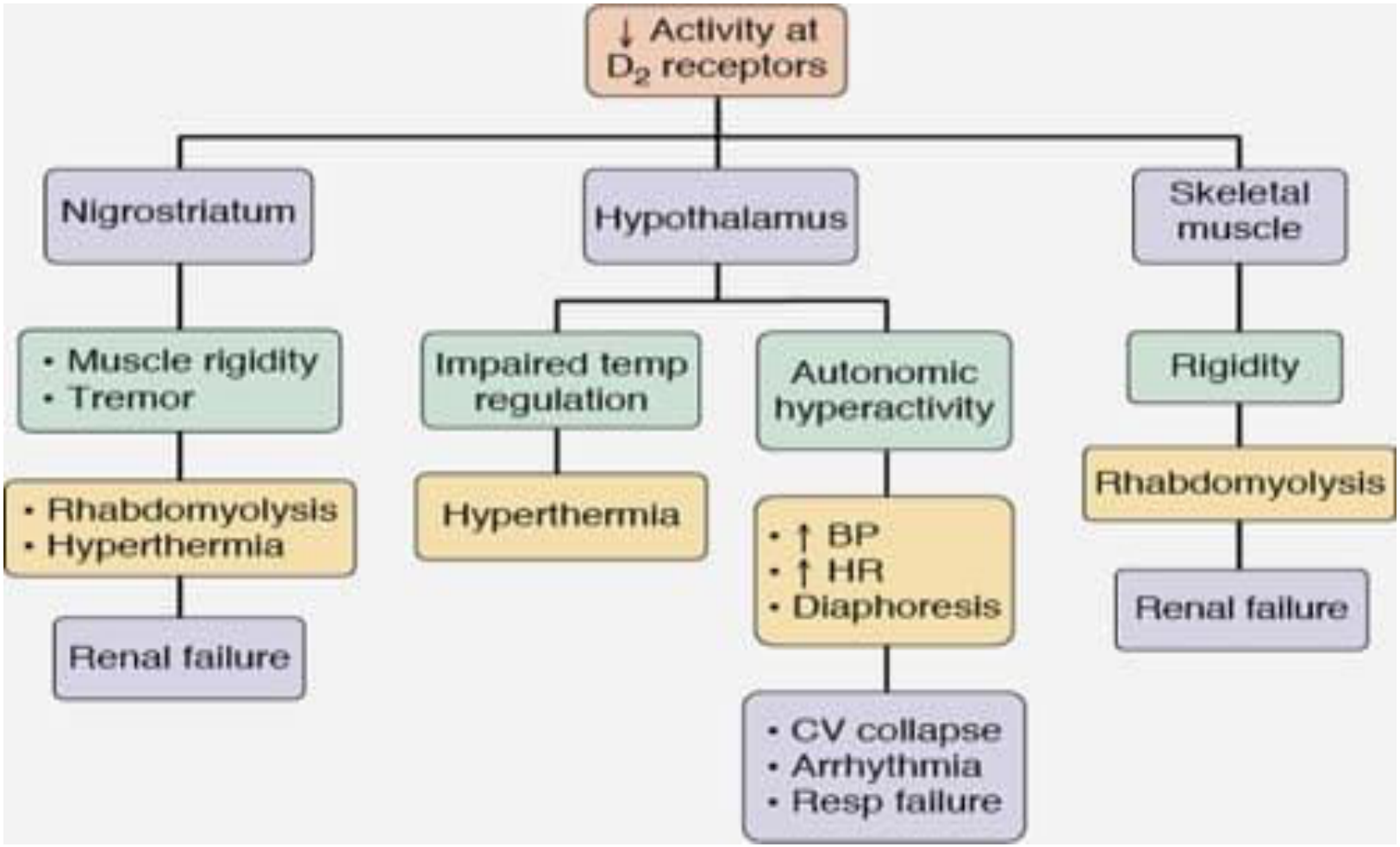
- **For HYPERactive delirium/AGITATION → start PRN, escalate to scheduled** (Nat Rev Neur. 2009; 5:210)
  - Haloperidol 2-5mg IV q3h PRN vs. 0.5-1mg PO q4h PRN vs. IM q1h PRN (*can lead to EPS, acute dystonias in Parkinsonism)*
  - Quetiapine 12.5-50 mg PO q6-12h PRN
  - Olanzapine 2.5-10 mg SL/PO/IM qd-q4h PRN

  **QTc prolong severity: Haloperidol > Quetiapine > Olanzapine; Δ tx if QTc ↑ by 25-50%, QTc>500, +U-wave/T-wave flattening*
- **If continued severe agitation → consider Psych/Geri consult:**
  - Haloperidol PRN: double PRN dose q20 min till effective, ~5-20 mg IV, consider standing or gtt (ICU);
  - Quetiapine PRN, standing 25-50 mg TID, extra dose HS.
  - Olanzapine PRN: standing 2.5-10 mg BID, extra dose HS

  Discontinue when able, avoid benzos. Prolonged antipsychotic use in elderly can increase mortality.

Sonam Dilwali


Neuroleptic Malignant Syndrome
Dopamine D2 receptors
Presynaptic Neuron
Dopamine
Postsynaptic Neuron
Antipsychotic


↓ Activity at D_2 receptors
Nigrostriatum
Hypothalamus
Skeletal muscle
• Muscle rigidity
• Tremor
Impaired temp regulation
Autonomic hyperactivity
Rigidity
• Rhabdomyolysis
• Hyperthermia
Hyperthermia
• ↑ BP
• ↑ HR
• Diaphoresis
Rhabdomyolysis
Renal failure
Renal failure
• CV collapse
• Arrhythmia
• Resp failure

- DSM-5 criterion:
- Hyperthermia(oral temperature >38.0 on atleast 2 occassions)
- Rigidity
- CPK>4 times the upper limit
- Changes in mental status(delirium, altered consciousness)
- Autonomic activation, including: tachycardia(>25% above baseline)
- Diaphoresis
- Bp elevation(systolic or diastolic >25%above baseline)
- Urinary incontinence
- Pallor
- tachypnoea

Table 4. Differential diagnoses.

NMS Differential Diagnosis	
Diagnosis	**Key differential characteristics**
Central anticholinergic syndrome	No rigidity, CPK levels normal
Lithium toxic encephalopathy	No fever, CPK levels are normal
Malignant hyperthermia	There is history of anesthesia with fluoronade anesthesics
Heat shock related to neuroleptics	No diaphoresis, no rigidity
Heat shock	No diaphoresis, no rigidity; History of heat and sun exposition
CNS Infection	Abnormal CSF, usually there is neurological focality
Lethal Catatonia	Semiology can be very similar but there is no history of neuroleptic admini
Serotonin Syndrome	CPK levels are normal; no leukocytosis; no rigidity, but clonus and hyperreflexi

CPK, creatinine phosphokinase; *CNS*, central nervous system; *CSF*, cerebrospinal fluid.

THERAPEUTIC MANAGEMENT

Non Pharmacological Measures:

- One should immediately discontinue the potentially harmful compound upo NMS
- Comfortable ambient temperature not higher than 21-23º C will allow bette dissipation
- Physical measures to control temperature such as application of wet cold ca
- It is very important to keep in mind that fluctuation in the level of conscious accompanied with an impaired deglutory reflex, and therefore, increased ris pneumonia, which is associated with a significant mortality rate
- In this regard, it has been demonstrated that a low-cost and low-risk measu significantly reduces the risk of aspiration pneumonia is to adopt a semi-recu positioning (defined as elevation of the head of the bed to 45 degrees)

Pharmacological treatment

- Dantrolene i.v at a dose of 1-10mg/kg.
- Bromocriptine 2.2mg T.I.D and increased 2.5-7.5 mg max 45mg qd.
- Benzodiazepines.
- ECT

Table 1

Medications associated with serotonin syndrome

Class	Medication(s)	Mechanism of action
Antidepressants	Selective serotonin reuptake inhibitors, serotonin-norepinephrine reuptake inhibitors, tricyclic antidepressants	Serotonin reuptake inhibition
	Monoamine oxidase inhibitors	Serotonin metabolism inhibition
	Trazodone	Serotonin reuptake inhibition, serotonin receptor agonism
	Mirtazapine	Serotonin receptor agonism
Triptans	Almotriptan, eletriptan, frovatriptan, naratriptan, rizatriptan, sumatriptan, zolmitriptan	Serotonin receptor agonism
Anxiolytics	Buspirone	Serotonin receptor agonism
Antiemetics	Ondansetron, granisetron, metoclopramide	Serotonin reuptake inhibition
Herbal supplements	St. John's wort	Serotonin metabolism inhibition, serotonin reuptake inhibition
Opioids	Buprenorphine, methadone, meperidine, tapentadol, tramadol	Serotonin reuptake inhibition
Anticonvulsants	Carbamazepine, valproic acid	Serotonin receptor agonism
Illicit substances	3,4-methylenedioxymethamphetamine, methamphetamine, cocaine	Increased release of serotonin

Source: References 2-5

Table 2

Clinical presentation of serotonin syndrome

Altered mental status	Autonomic dysfunction	Neuromuscular abnormalities	Serious complications
Agitation	Hypertension	Tremor	Rhabdomyolysis
Confusion	Tachycardia	Clonus	Myoglobinuria
Anxiety	Diaphoresis	Hyperreflexia	Metabolic acidosis
Restlessness	Hyperthermia	Muscle rigidity	Renal failure
Excitement	Nausea	Akathisia	Respiratory failure
Delirium	Vomiting		Seizures
Coma	Diarrhea		Death
	Mydriasis		

Source: References 2-5

Symptoms & Management in Serotonin Syndrome:

Mild	Moderate	Life Threatening
Mydriasis	**Altered Mental Status** (agitation, disorientation, excitement)	Delirium
Shivering	**Autonomic Hyperactivity** (rigidity, tachycardia, hyperthermia of >40°C)	Hypertension
Sweating	**Neuromuscular Abnormalities** (tremor, clonus, hyperreflexia)	Hyperthermia
Tachycardia (mild)		Muscle rigidity
		Tachycardia

Management stages:

Observe for at least 6 hrs **Benzodiazepines**	Admit to hospital Cardiac monitoring **Cyproheptadine**	Intensive care unit **Esmolol or nitroprusside** **Cooling measures,** Sedation, SkM paralysis, ventilation

Serotonin syndrome and neuroleptic malignant syndrome: Distinguishing features		
	Serotonin syndrome (SS)	Neuroleptic malignant syndrome (NMS)
Onset	Within 24 hours	Days to weeks
Neuromuscular findings	Hyperreactivity (tremor, clonus, reflexes)	Bradyreflexia, severe muscular rigidity
Causative agents	Serotonin agonist	Dopamine antagonist
Treatment agents	Benzodiazepine, cyproheptadine	Bromocriptine
Resolution	Within 24 hours	Days to weeks

Table 1
Opioids intoxication and withdrawal in critically ill patients

Substance	Intoxication	Withdrawal	Associated Complications
Opiates • Morphine, codeine Semisynthetic opioids • Heroin, buprenorphine, hydromorphone Synthetic opioids • Fentanyl, methadone	Depressed mental status Impaired judgment Pupillary constriction Hypoventilation	Fever, tachycardia, hypotension Restlessness, irritability, insomnia Yawning, diaphoresis, piloerection Mydriasis, lacrimation, rhinorrhea Nausea, diarrhea, abdominal pain Myalgia, arthralgia	Overdose death Injection-related infection HIV HCV

Withdrawal symptoms	Somatic treatment	Dosing
Nausea and vomiting	Dimenhydrinate (Gravol®)	50–100 mg PO/IM q4h prn
	Prochlorperazine (Stemetil®)	5–10 mg PO q4h prn
Diarrhea	Loperamide (Imodium®)	4 mg PO for diarrhea, then 2 mg PO prn (max: 16 mg/24 hr)
Myalgia	Acetaminophen (Tylenol®)	325–650 mg PO q4h prn (max: 4,000 g/24 hr)
	Naproxen (Naprosyn®)	500 mg PO bid × 4 days, then prn
Anxiety, dysphoria, lacrimation, rhinorrhea	Hydroxyzine (Atarax®)	25–50 mg PO tid prn
Insomnia	Trazodone (Trazorel®)	50–100 mg PO qhs × 4 days, then prn
↓ Sympathetic drive (tachycardia, hypertension), diaphoresis, restlessness	Clonidine (Nexiclon®)[a]	0.1 mg PO qid × 4 days, then[b] 0.05 mg PO qid × 2 days, then 0.025 mg PO qid, then stop

Notes: [a]Monitor blood pressure prior to each dose, as clonidine may cause hypotension; [b]if <91 kg (200 lb) (doses need to be higher if >91 kg). Data source: Kosten and O'Connor[55] and Kleber et al.[92]

Alcohol

Intoxication

B. Inappropriate sexual or aggressive behavior, mood lability, impaired judgment

C. 1 or more of:

- Slurred speech
- Incoordination
- Unsteady gait
- Nystagmus
- Impairment in attention or memory
- Stupor or coma

Withdrawal (2+ within hrs-days)

- Autonomic hyperactivity
  - E.g., sweating or pulse rate >100 bpm
- Increased hand tremor
- Insomnia
- Nausea or vomiting
- Transient visual, tactile, or auditory hallucinations or illusions
- Psychomotor agitation
- Anxiety
- Generalized tonic-clonic seizures

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).

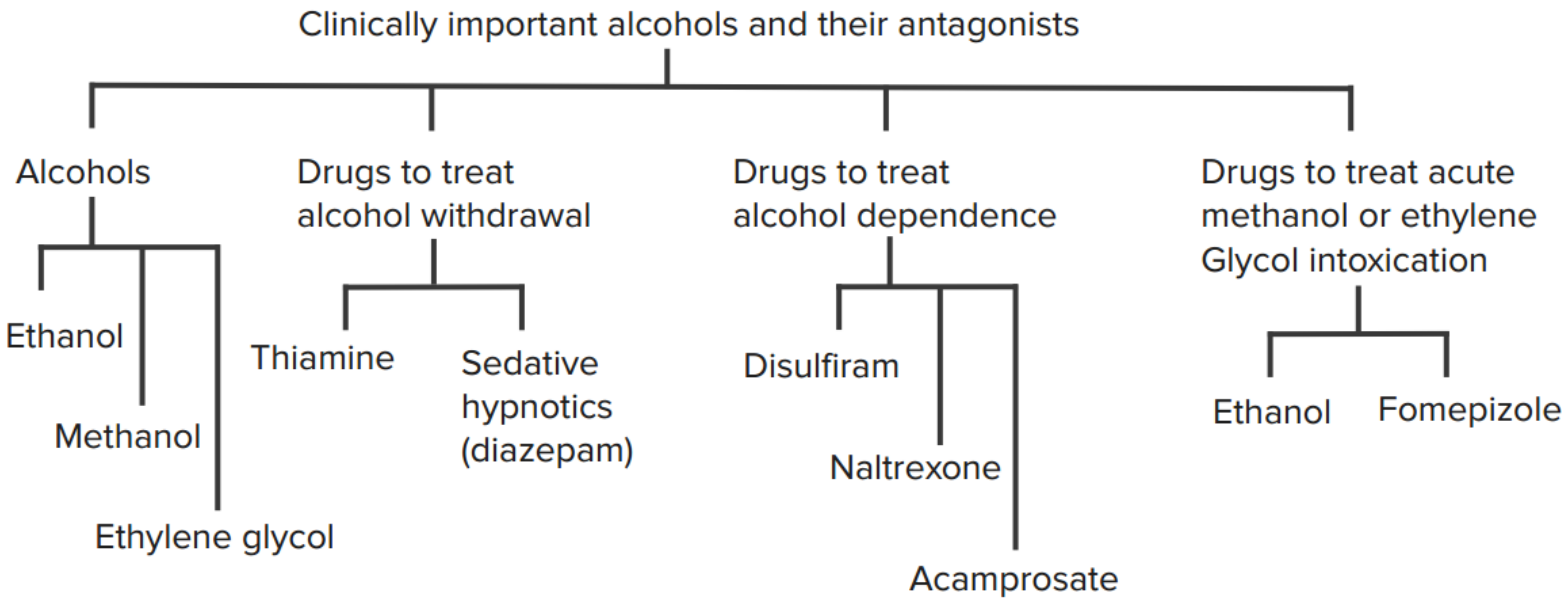

Clinically important alcohols and their antagonists
Alcohols
Ethanol
Methanol
Ethylene glycol
Drugs to treat alcohol withdrawal
Thiamine
Sedative hypnotics (diazepam)
Drugs to treat alcohol dependence
Disulfiram
Naltrexone
Acamprosate
Drugs to treat acute methanol or ethylene Glycol intoxication
Ethanol
Fomepizole

Table 2. DSM-5 Criteria for Withdrawal Delirium (Delirium Tremens).*

Criteria for alcohol withdrawal
Cessation of or reduction in heavy and prolonged use of alcohol
At least two of eight possible symptoms after reduced use of alcohol:
Autonomic hyperactivity
Hand tremor
Insomnia
Nausea or vomiting
Transient hallucinations or illusions
Psychomotor agitation
Anxiety
Generalized tonic–clonic seizures
Criteria for delirium
Decreased attention and awareness
Disturbance in attention, awareness, memory, orientation, language, visuospatial ability, perception, or all of these abilities that is a change from the normal level and fluctuates in severity during the day
Disturbances in memory, orientation, language, visuospatial ability, or perception
No evidence of coma or other evolving neurocognitive disorders

* The criteria are based on the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5).[1] A patient who meets the criteria for both alcohol withdrawal and delirium is considered to have withdrawal delirium.

- Management is usually with high doses of benzodiazepines, parenteral thiamine and maintenance of fluid and electrolyte balance.

Cannabis Intoxication and Withdrawal

- Intoxication:
  - Euphoria
  - Sedation
  - Antiemetic
  - Hyperphagia
  - Memory deficits
  - Conjunctival injection
  - Ptosis
  - Tachycardia
  - Psychosis

- Withdrawal
  - Dysphoria
  - Anxiety
  - Insomnia
  - Nausea
  - Anorexia
  - Headache

Hallucinogen Intoxication and Withdrawal

- Intoxication
  - Euphoria, anxiety, panic reactions
  - Perceptual abnormalities
  - Incoordination/ tremor
  - Tachycardia
  - Blurred vision
  - Dilated pupils
  - Diaphoresis
- Withdrawal
  - None described

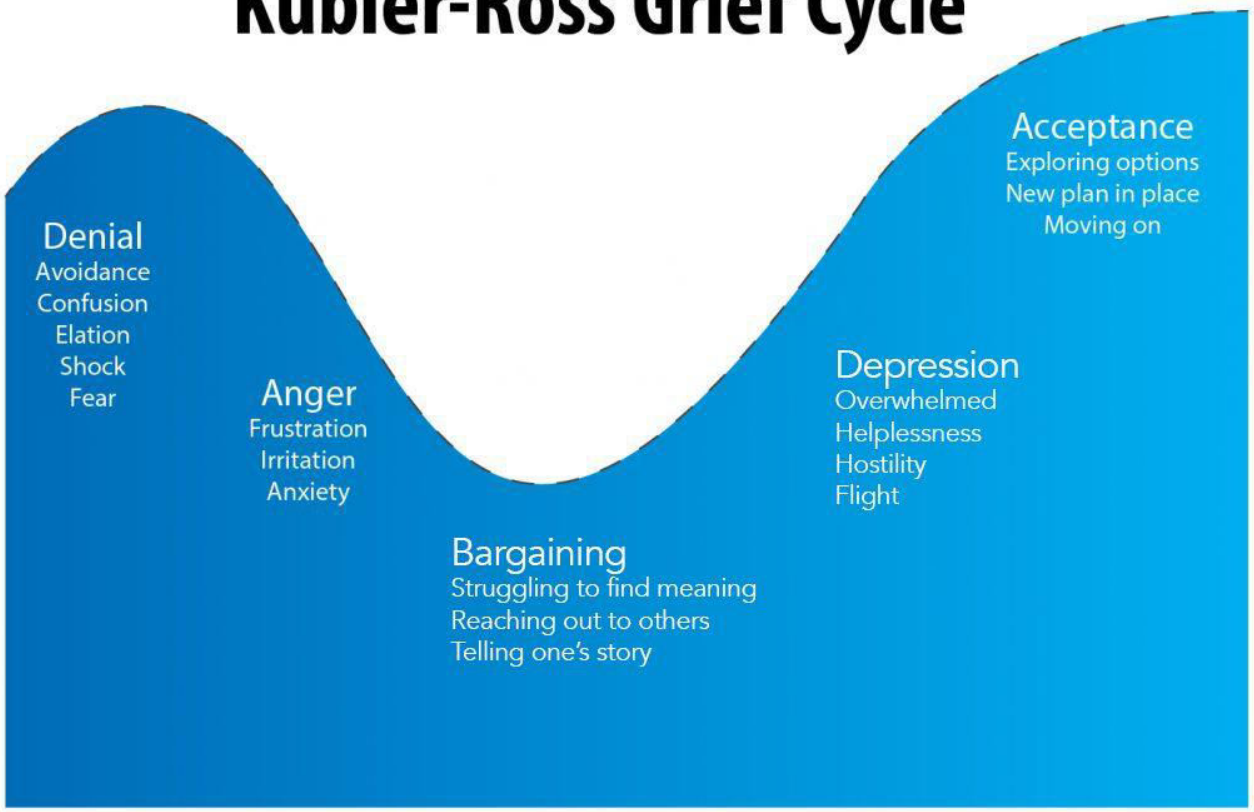
GRIEF

- **Grief is the subjective feeling precipitated by the death of a loved one.**

- **The term grief is then used to describe emotional, cognitive, functional, and behavioral responses to the death.**

- **Grief is also often used more broadly to refer to the response to other kinds of loss; people grieve the loss of their youth, opportunities, or functional abilities.**

Kübler-Ross Grief Cycle



Information and Communication

Emotional Support

Guidance and Direction


SIGNS OF A PANIC ATTACK
SWEATING
DIZZINESS
ACCELERATED HEART RATE
SENSATION OF SMOTHERING
TREMBLING
CHEST PAIN OR DISCOMFORT
NAUSEA OR ABDOMINAL DISTRESS
CHILLS OR HEAT SENSATIONS
FEELING DIZZY, UNSTEADY OR FAINT
FEAR OF LOSING CONTROL OR DYING
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More Fear
Anxiety
Panic Attack
Fear of another one
More Anxiety
Another Attack
The PANIC Cycle

- P.D. twice more common in women.
- Life time prevalence is about 4%.
- Onset usually between 20-40 yrs.

- Co morbidity present in 90% of P.D. and 84% of agoraphobia patients.
- 10 -15% of P.D. patients have depression.
- 15 – 30% have social phobia.
- 15 – 30% have GAD.
- 30% have OCD.

Differential Diagnosis

- Cardiac problems like MI, MVP etc.
- Asthma, pulmonary embolism.
- Hypoglycemia.
- Seizures.
- Meniere's disease.
- Drug intoxication- amphetamine, nicotine, cocaine, theophylline.
- Drug withdrawal: alcohol, antihypertensives.
- Pheochromocytoma
- Carcinoid syndrome

Treatment

- Psychological:
  - Cognitive Behavior Therapy.
  - Cognitive restructuring.
  - Relaxation training and diaphragmatic breathing.

Table 2. Pharmacologic Treatment for Panic Disorder.*

Medication	Starting Dose	Therapeutic Dose	Half-Life	Side Effects
	mg/day			
Selective SSRIs				Class effects include nausea, anorexia, tremors, anxiety, sexual dysfunction, jitteriness, insomnia
Fluoxetine (Prozac, Eli Lilly)†	10	20–60	Long	Class effects
Sertraline (Zoloft, Pfizer)†	25	50–200	Short	Class effects and loose stools
Citalopram (Celexa, Forest)	10	20–60	Short	Class effects
Escitalopram (Lexipro, Forest)	10	10–30	Short	Class effects
Paroxetine (Paxil, GlaxoSmithKline)†	10	20–60	Short	Class effects and drowsiness, fatigue, weight gain
Paroxetine (controlled release) (Paxil CR, GlaxoSmithKline)†	12.5	12.5–25	Short	Class effects
Fluvoxamine (Luvox, Solvay)	50	150–300	Short	Class effects
Tricyclic antidepressants‡				Class effects include sedation, weight gain, dry mouth, urinary hesitancy, constipation, orthostatic hypotension, and slow conduction time through the His bundle
Imipramine (Tofranil, Mallinckrodt)	10–25	100–300	Short	Class effects
Nortriptyline (Pamelor, Mallinckrodt)	10–25	75–125	Short	Class effects
Desipramine (Norpramin, Sanofi Aventis)	10–25	100–300	Short	Class effects
Benzodiazepines§				Class effects include sedation, cognitive slowing, physical dependence
Clonazepam (Klonopin, Roche)†	0.25, 3 times daily	0.5–1.5, 3 times daily	Moderate	Class effects
Alprazolam (Xanax, Pharmacia and Upjohn)†	0.25, 3 times daily	0.5–1.5, 3 times daily	Short	Class effects
Alprazolam (extended-release) (Xanax XR, Pharmacia and Upjohn)†	0.50–1.0, 3 times daily	1–5, once daily	Long	Class effects
Lorazepam (Ativan, Wyeth)	0.25, 3 times daily	0.5–1.5, three times daily	Short	Class effects
SNRI				
Venlafaxine (extended-release) (Effexor XR, Wyeth)†	37.5	75–300	Short	Class effects include nausea, sweating, dry mouth, dizziness, insomnia, somnolence, sexual dysfunction, and hypertension at doses >300 mg

* Clonazepam and all SSRIs, except paroxetine, are in Food and Drug Administration (FDA) pregnancy category C. Paroxetine is in category D, as are all tricyclic antidepressants, lorazepam, and alprazolam. Category C drugs include those for which "either studies in animals revealed adverse effects on the fetus and there are no controlled studies in women or studies in women and animals are not available. Drugs should be given only if the potential benefit justifies the potential risk to the fetus." Category D drugs include those for which "there is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g., if the drug is needed in a life-threatening situation or for a serious disease for which safer drugs cannot be used or are ineffective)."

† This drug was approved by the FDA for the treatment of panic disorder.

‡ Baseline electrocardiography is recommended (tricyclic antidepressants are contraindicated for patients with conduction abnormalities).

§ These agents could be used as needed to help patients confront feared situations. A 0.5-mg dose of oral clonazepam, alprazolam, or lorazepam or a 0.5-mg dose of sublingual lorazepam is recommended.


THANK
YOU