Emergency psychiatry

by Gábor Csukly

Emergency psyhiatry 'What to do?'

- What are the symptoms?
  - Physical examination to assess neurological symptoms
  - Basic questions to assess psychopathology
- History taking (patient and others)
- Laboratory tests
- Differential Diagnostic questions
- Optional: Brain Scan (CT, MRI)

(without medical history available, brain scan become more important)

- Diagnosis
- What to do?
  - Choose medication
  - Where to refer the patient?

Table of Contents

There are four main issues that must be considered when a patient with severe psychiatric symptoms is admitted to an emergency unit:

1. Symptoms due to **general medical conditions – Without delirium** (symptoms similar to mental disorders)
2. **Delirium** caused by **general medical conditions**
3. Symptoms of **severe mental disorder** (e.g. schizophrenia, bipolra, drug induced psychosis …)
4. **Psychosocial crisis**

- Additionally: 'When the medication is the source of the problem'
  - Severe **side effects of psychotropic medication**

Symptoms due to general medical conditions – Without delirium

Most frequent syndromes:

- Cerebral (meningitis, encephalitis) or systemic infection (sepsis)
- Brain tumors
- Subdural hematoma
- Hypoxemia or electrolyte disturbances
- Thyroid disturbances
- Epileptic Seizures (aura stage)

– These are potentially dangerous states due to the psychiatric symptoms (e.g.: aggression) as well (besides the basic problem)

– They can cause various symptoms very similar to mental disorders (delusions, affective and cognitive symptoms, anxiety)

– Increased risk of developing delirium later

General medical conditions
Delirium – Symptoms

It is a syndrome not a disease

A

- Fluctuation of vigility (hypo-, hypervigility) /A
- Impaired attention (sustaining, focusing, shifting) /A

B

- Disorientation/B (in time, space, and person)
- Memory functions/B
- Form of thinking (incoherence or word salad) /B
- Perceptions (illusions, hallucinations) /B
- Psychomotor symptoms (stupor – restlessness, agitation)

C

- Acute onset/C (differential diagnosis!)

Delirium – Differential Diagnosis

Delirium should be differentiated from dementia and psychosis (schizophrenia).

Sometimes we can detect similar symptoms, but..

- Dementia vs. Delirium – Acute onset (hours or days!)
- Severe psychosis (schizophrenia and bipolar) vs. Delirium – Vigility

- Delirium is often a comorbid state, detected with other psychiatric disorders together, first of all with dementias

- Delirium:
  1. Acute onset and fluctuations in course
  2. Fluctuation of vigility

Delirium – Prevalence (USA)

Delirium is a frequent syndrome in hospitals.

Prevalence:

- Inpatients 10–30%
- Inpatients (Elderly) 10–40%
- Postoperative states ~50%
- Patients, terminal state ~80%

Duration:

- 10–12 days on the average, but may last from 1 week – 2 months (!!)
- In case of elderly the duration is often longer (often > 1 month)
- Undetected in many cases, hence frequency is underestimated
- In hospitals this is the most common cause for a psychiatric consultation

Delirium – Causes

- 1a.) Metabolic disturbances (hypoxia, anemia, hypoglycemia, acid-base disturbances, dehydration, electrolyte disturbances, kidney failure, liver disease) – 'Your Brain does not like few sugar, few water or few oxygen'
- 1b.) CNS (head trauma, dementia, seizures)
- 1c.) Cardio-pulmonary (arrhythmia, respiratory failure)
- 1d.) System disorders (inflammation (fever), tumor, postoperative state)

- 2.) Substance/medication (toxin) intoxication or withdrawal

- 3.) Multiple causes (*in case of elderly multiple causes were detected in almost 50% of delirium cases)
  Sometimes detecting the first cause is not enough!!!

- 4.) Unknown origin

*Francis J, Kapoor WN: Delirium in hospitalized elderly. J Gen Intern Med 1990; 5(1):65-79

Delirium – Intoxication and Withdrawal

Two frequent cause of delirium is substance intoxication and withdrawal.

Intoxication:

- Delirium starts minutes (stimulants) or hours (alcohol, hallucinogens) after taking the substance
- … and ends with the end of intoxication
- Caused by toxins (CO2, CO, pesticides), or *drugs like antipsychotics (Clozapine), anaelgetics, sedatives, anti-parkinsonian medication (procyclidine, biperiden), lithium or certain antidepressants (clomipramine) – anticholinergic effects
- (possible anticholinergic effect in case of hypoxia as well)

Withdrawal:

- Patient develop symptoms hours or days after last use of substance (depends on the half life of the drug)

* Mintzer, J., Burns. A. (Medical University of South Carolina, Department of Psychiatry, Charleston, Dél-Karolina, USA): J. R. Soc. Med., 2000, *93,* 45746

Delirium – Other contributing factors

- Older age
- Cognitive deficit (Previously)
- Certain Medications (e.g..: Clozapine)
- Pain
- Environmental factors like sensory deprivation (dark or noisy places)
- Disabled Patient

http://www.guideline.gov

Delirium – Course of treatment

a) First: Assessing life threatening complications (e.g.: hypokalaemia, arrhythmias, inflammation, head trauma) and treat them!

b) Eliminating psychiatric symptoms (sometimes, in severe cases, this comes first)

c) Exploring Etiology (multiple cause! – e.g.: alcohol and infection)

d) Consultation with other experts–

- Which department should treat the patient? (etiology?) – in many cases it is not easy to find the ideal solution…

The causes of delirium are usually not to be treated in a psychiatric ward, but sometimes the patient has so severe psychiatric symptoms, that he or she must be kept in a psychiatry unit.

Delirium – Assessing etiology and complications

- History taking (delirium or substance misuse in the history) – differential diagnosis (e.g.: dementia)
- Physical examination (general and neurological symptoms) – focal neurological signs
- Psychopathology, Severity of psychiatric symptoms?
- Pulse rate, blood pressure, monitor oxygen saturation
- Laboratory tests: Sodium, Potassium, glucose, Calcium, carbamide, creatinine, liver enzymes, full blood count, Ammonia
- ECG (arrhythmias), Chest X-Ray (cause of respiratory failure), Urine culture (infection)
- In certain cases: EEG (seizures), CT (head trauma), MRI (tumor?), lumbar puncture and/or blood culture (infection?)

Delirium – Minimizing the contributing factors

Since many of the complications (e.g.: infection) may also induce delirium, it is very important to prevent or eliminate them to Stop the vicious cycle!

- At least do not worsen the situation: Avoid and discontinue medications with anticholinergic effect
- Prevent/ treat infections – use antibiotics + cool in case of fever
- Prevent / treat dehydration and electrolyte disturbances – with oral rehydration or intravenous fluids
- Ease the pain!
- Support oxygen transport (monitoring oxygen saturation, pulse rate and blood pressure) – give oxygen if needed
- Monitor gastric and bladder functions – give stool softeners or laxatives, catheter in case of urine retention
- Feed the patient iv. if needed

http://www.guideline.gov

Delirium – Therapy of psychopatological symptoms

We have to treat the psychiatric symptoms to be able to treat the causes!

- BZD monotherapy or combination with antipsychotics
- CBZ + Tiaprid* (selective d2/d3 antagonist)
- If higher doses of BZDs and antipsychotics were ineffective: Restrain the patient (increased risk of side effects, bad cost/benefit)
- Alcohol withdrawal: Vitamins (B_6 or vitamin B complex)
- In case of elderly avoid BZD if it is possible or reduce the doses significantly!
  - Haloperidol vs. Atypical Antipsychotics** (Risperisone, Tiaprid, Quetiapine) – increased risk of Pneumonia!
    1. Monitoring ECG : QTc interval>450ms
    2. Start with small doses and increase the dose gradually in case of elderly***

*Soyka M, Schmidt P, Franz M, Barth T, de GM, Kienast T, Reinert T, Richter C, Sander G: Treatment of alcohol withdrawal syndrome with a combination of tiapride/carbamazepine: results of a pooled analysis in 540 patients. Eur Arch Psychiatry Clin Neurosci 2006; 256(7):395-401

**Rea RS, Battistone S, Fong JJ, Devlin JW: Atypical antipsychotics versus haloperidol for treatment of delirium in acutely ill patients. Pharmacotherapy 2007; 27(4):588-594

***Bendigo Health Care Group © 2001

Delirium – Nursing

It is worth to pay attaention to nursing as well, it may help you to decrease the dose of psychotropics!

- Help with orientation (e.g..: using calendar, help with navigation)
- Sensory stimuli: quiet, calm, but well illuminated room
- Sleeping: give warm milk or herbal tea in the evening, relaxation music, avoid loud noises
- Make a friendly environment: family members, objects from home, staying in the same room during hospitalization
- Mobility: avoid restrains and catheter if possible, changing place 3 times a day
- Give simple explanations to his/her questions
- Provide information to the family

http://www.guideline.gov

Emergency due to **severe mental disorders**

Causes (most frequent):

1. Schizophrenia
2. Drug induced psychosis
3. Affective disorders: Manic and depressed episodes
4. Dementia (BPSD)
5. Drug misuse and withdrawal (without delirium)

Symptoms:

- Hallucinations (varies, but audiory hallucinations are the most frequent)
- Delusions
- Disorganized thinking and speech
- Psychomotor agitation and excitation
- Negativism: poverty of speech, movement, motivation
- No insight and failure to cooperate and to accept help
- Strong anxiety
- Exhaustion
- Impulsive reactions: self-harm and aggression

1. Schizophrenia

Schizophrenia can be an emergeny case, due to the Increased risk of suicide or heteroaggression

- Hallucinations
- Delusions (paranoid and megalomaniac)
- Disorganized speech and behavior
- Psychomotor agitation
- Strong anxiety (elevated pulse rate)

... Or: increased risk that others harm the patient!

Examples (Schizophrenia)

The most typical problematic scenarios (symptoms):

Catatonic stupor: in severe cases patients do not eat and drink, do not move at all

Paranoid delusion: patient thinks that others (typically spouse, parents, friends, neighbors) want to harm him and his aggression is an answer to this hypothetical harm („self defence")

Hypochondriac delusions increase the risk of suicide, since the patient may believe that his somatic disorders are untreatable

Auditory Command hallucinations: voices give orders to the patients to offend (or kill!) someone

2. Drug Induced Psychosis

- Any schizophrenia-like symptom may be presented! The dangers are very similar either. (aggression, suicide risk)
- Symptoms of drug intoxication go away as the drug is eliminated from the body.
- Contrarily, drug induced psychosis may start during intoxication but lasts for days, weeks or even months. (... and can be the triggering event of a schizophrenic process)
- Many patients keep on taking drugs even after treatment!

<u>Most frequent substances:</u>

- Cannabis
- Amphetamine
- Cocaine
- Hallucinogens
- Designer drugs (MDMA, MDA, Mephedrone, MDPV)

Examples (Drug Induced Psychosis)

Drug induce psychosis is an emerging problem

2.) The first psychotic episode of a 30 years old actor was induced by magic mushrooms when he was 21. Since then he was treated with the diagnosis of schizoaffective psychosis, chief complaint is a matrix-like paranoid delusion with affective symptoms (manic and depressed episodes) and sometimes thinking incoherence.

Recently it turned out that he has been using drugs (mainly cannabis) all the time. There were periods, when he used cannabis daily and stopped taking the antipsychotics at the same time. During psychotic episodes he always denied to work, and lost his jobs many times.

Schizophrenia or drug induced psychosis?

Examples (Drug Induced Psychosis)

1.) Young American programmer who lived in Budapest was not able to sleep for nights and used THC for several times during this period. After a few days he felt that he had very important ideas he had to share with everyone on the street.

He started giving a speech from the top of a car, after a while security person from a supermarket nearby hit him at his head by a baton.

He was admitted to our department later that day with head trauma. Luckily he had no fractures and no irreversible injuries.

He was treated with antipsychotics and symptoms of mania went away quickly.

Sometimes we have to keep these patients in a psychiatric ward during psychotic episode to protect them from society...

Examples (Drug Induced Psychosis)

3.) A 16 year old girl was admitted to our emergency unit with auditory hallucinations, paranoid delusions and strong anxiety. During night she believed that intruders were in their house, who were talking in the next room to that one she slept. A short treatment with antipsychotic medication was enough, later it turned out that the girl has used mephedrone for months.

She reported: „This drug is so good, that I stopped taking cocaine and amphetamine…!”

What is the youngest age children start using drugs?

Emergency Treatment of Psychosis

- Psychotic symptoms are to be treated with antipsychotic im. and optionally with benzodiazepines im. (or iv.)
- If the patient is violent and severely agitated, the first choice is frequently Haloperidol injection or solution
- In milder cases, atypical antipsychotics with better side-effect profile can be good alternatives: Aripiprazole im., Olanzapine im. (BZDs cannot be given with im. olanzapine)
- evidence based medicine – what is the problem?

3. Affective disorders: Unipolar Depression and Bipolar Disorder

Affective disorders can cause emergeny case, due to the

Increased risk of suicide in depressed episode

- Negative thoughts
- Anhedonia
- Feeling of Hopelessness and helplessness

and heteroaggression in manic episode

- Megalomaniac
- Agitated
- Irritated

... Or: increased risk that others harm the patient with mania! (no insight and light-minded)

Example (Bipolar Disorder)

They cannot see or assess the possible consequences of their acts. …or they simply do not care…

Middle aged woman with bipolar disorder treated with manic phase in our department. Chief complaints were flight of ideas, mild confusion, and insomnia.

Since she has come by her own and was not aggressive, she could move freely in the department and treated in an open unit.

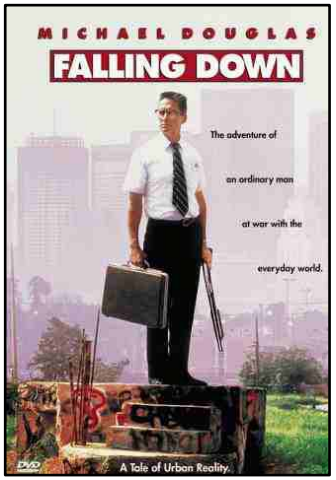
After few days she got acquainted with a young man treated in the same unit with personality disorder.

This guy gave her iv. heroin at night first injecting it to himself and after that to the female patient. The young woman did not feel the possible danger in this situation, found it cool to use drug, which she never used before.

After all it turned out, that the man was previously infected by Hepatitis C virus! This patient was lucky: she had not been infected.

Assess suicidal risk*

Assessing the suicidal risk must be very important in many psychiatric disorders, especially in depressive disorders.



Demographic profile:
- Over 45 years
- Male
- Divorced or widowed
- Unemployed
- Conflictual interpersonal relationships
- Chaotic family background

Health:
- Chronic illness
- Hypochondriac
- Substance abuse

Suicidal activity:
- Frequent, intense
- Multiple planned attempts
- Method lethal and available

Lack of Resources:
- Poor achievement
- Poor insight
- Restricted affect
- Poor raport
- Socially isolated

*Kaplan & Sadock's: Synospis of Psychiatry (9th edition)

4. Dementias and BPSD

Dementias cause emergency situation frequently due to agitation and aggression .

- Incidence: Alzheimer >50%, Vascular ~15-20%, Mixed (Vascular/Alzheimer) 15-20%, Lewy body ~ 5%
- In Alzheimer dementia BPSD were found in 64% of the cases even at first visit *
- Most frequent symptoms: Depression (24%) and agitation/aggression (24%) **
- Symptoms in time: In the early phase the affective symptoms dominate, later the behavior symptoms
- Symptom pattern:
  1. In Alzheimer dementia the agitation
  2. In Vascular dementia depression
  3. In Lewy body dementia the psychotic symptoms (hallucinations, delusions)

  are predominant.

*Devanand DP, Jacobs DM, Tang MX, Del Castillo-Castaneda C, Sano M, Marder K, Bell K, Bylsma FW, Brandt J, Albert M, Stern Y: The course of psychopathologic features in mild to moderate Alzheimer disease. Arch Gen Psychiatry 1997; 54(3):257-263

**Lyketsos CG, Steinberg M, Tschanz JT, Norton MC, Steffens DC, Breitner JC: Mental and behavioral disturbances in dementia: findings from the Cache County [illegible] Memory in Aging. Am J Psychiatry 2000; 157(5):708-714

Behavioral and Psychological Symptoms in Dementia (BPSD)

Behavioral symptoms:

- ‘Wandering’ – e.g.: leave the house/ward and cannot find the way back, follow somebody, walk in the night
- Psychomotor agitation (non-productive motor activity)
    1. Non-aggressive: hide objects, pointless activities, use objects inadequately, dress oneself repetitively
    2. Aggressive: verbally/physically

Psychotic symptoms:

- Hallucinations (visual>auditory>other or complex)
- Delusions (delusion of theft and phantom intruder, poverty, infidelity, Capgras syndrome)

Affective symptoms:

- Emotional lability / depression (mania)

Other Psychiatric symptoms:

- Insomnias / altered sleep-wake cycles
- Anxiety

Psychosis in dementia and schizophrenia

Sometimes, if medical records are not available, psychosis in dementia can be confused with schizophrenia in elderly. The following table may help to differentiate.

	Alzheimer D.	Sch in elderly
Bizarre delusions	Rare	Frequent
Capgras syndrome	Frequent	Rare
Hallucinations (most frequent)	Visual	Auditory
Suicide thoughts	Rare	Frequent
Final remission of psychosis	Possibly	Unlikely
Long-term AP treatment	Unlikely	Usually
Optimal AP dose compared to younger sch. patients	15-25%	40-60%

http://www.ipa-online.org/

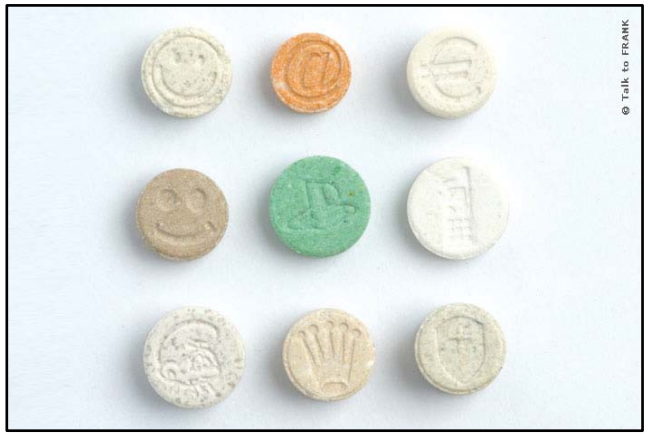
The basic rules of BPSD therapy

- Psychotic symptoms (delusions, hallucinations) and psychomotor agitation: small dose of antipsychotic medication (prefer atypical ones) ~25% of dose relative to schizophrenia
- Conrarily to Schizophrenia: Try to decrease the dose as soon as possible, and later stop pharmacological treatment if symptoms are gone!

- Avoid BZDs if it is possible; if not, use smaller doses (respiratory depression; can acculumulate and cause severe vigility problems later: stupor or coma)

- Depression – lower dose of SSRI can be used if dementia is not severe, but Discontinue SSRIs in case of agitation or delirium

5. Substance misuse



- Central nervous system depressants:
  - Benzodiazepines –flumazenil iv.
  - Alcohol – gastric lavage
  - Opiates (Heroin) – naloxon iv.

Intoxication with CNS depressants can be life-threatening due to respiratory depression and to be treated in an intensive care unit.

- Stimulants: (give BZD, e.g.: lorazepam 2-4mg iv.)
  - Amphetamine („Speed")
  - Cocaine
  - Designer Drugs:
    - MDMA, MDA („Ecstasy")
    - Mephedrone, MDPV (NEW! From 2007)
  - Hallucinogens
    - LSD
    - Psilocybin (Psilocin) „Shrooms"
    - Mescaline

Serotonin Syndrome (Stimulant intoxication)

Contrarily to CNS depressants, subjects intoxicated with stimulants are often treated in a psychiatric ward (if the cognitive symptoms predominated).

- Cognitive effects: headache, agitation, hypomania, mental confusion, hallucinations
- Autonomic effects: shivering, sweating, hyperthermia, hypertension, tachycardia, nausea, diarrhea

In severe cases:

- Somatic effects: myoclonus, hyperreflexia and tremor

Give BZD: lorazepam 2-4mg iv. or 1-2mg clonazepam iv.

Drug Withdrawal

- Alcohol
  - Sweating
  - Tremor
  - Anxiety
  - Agitated, aggressive
  - Delirium tremens (Life Threatening!!!): hallucinations, altered consciousness, impaired attention, disorientation, hyper- or hypovigility, tachycardia, high blood pressure, hypokalaemia

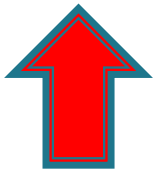
- Heroin
  - Not directly life threatening, but dangerous!
  - Agitated, aggressive
  - Muscle ache
  - Increased tearing, sweating, yawning, runny nose
  - Insomnia
  - Later: diarrhea, nausea, vomiting

Symptoms due to **Psychosocial crisis**

Psychosocial CRISIS: unbalance between stress and coping skills

Stress requires the mobilization of energy to overcome difficulties

E.g: loss of significant others; job, school, family, and financial problems; marriage; cultural change; illness and so on



Internal: activation of psychopathology (depression, anxiety, unusual experiences)

Coping: productive resolution of stress - insight, active change, communication, seeking support, reinterpretation of the situation, reappraisal, learning new skills, new meaningful activities and relationships, acceptance of unchangeable

Crisis and inadequate coping: **adjustment disorder**

Adjustment disorder: Short-term maladaptive reactions to a psychosocial stressor. (a pathological reaction instead of normal coping)

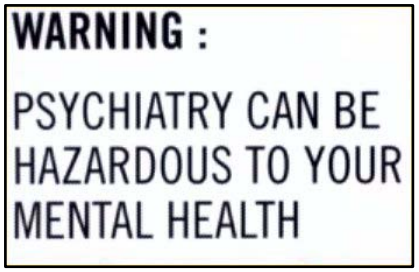
- depressive type
- anxious type
- mixed type
- disruptive behavior (e.g. aggression, impulsivity, substance misuse)
- reactive psychosis
- can worsen psychiatric disorders
- can increase the suicidal risk
- "the first milestone on the road to hell": the above symptoms may lead to declining social functions, loss of job and support, isolation, shift to the periphery of society, and slow self-destruction (vicious cycle!)

The "sunny side" of crisis: successful resolution leads to the acquisition of new skills, development of personality, and increased self confidence

CRISIS INTERVENTION - What can we do?

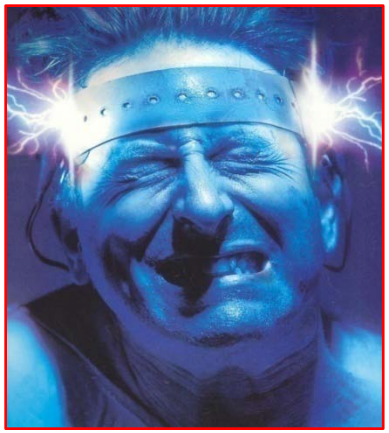
1. Recognition of **crisis signals** (closed attitude, rejection, lack of eye contact, denial, and hopelessness)
2. **Understanding, acceptance**, and warm milieu
3. There is no need to immediately solve the situation, no direct advice
4. Listen and devote time and patience
5. Be a human being and not cold professional - **Empathy: try to understand the feelings of the patient**
6. But keep boundaries!
7. Use the **words of the patients**
8. Offer **alternative explanations**
9. Evaluate psychiatric disorders and **suicide risk**
   - In milder cases: Refer the patient to social and psychological support services
   - In severe cases: Refer the patient to inpatient services in case of emergency (psychotic symptoms, risk of auto- or heteroaggression)

Severe side effects of psychotropic medication I.



- Lithium intoxication (narrow therapeutic window): vomiting, profuse diarrhea, abdominal pain, tremor, ataxia, seizures, confusion -> (later, in most severe cases) focal neurological signs and coma
- Acute dystonia – mostly typical antipsychotics: decrease dose + biperiden or benztropine im.
- Clozapine – agranulocytocis -> consulting with a hematologist
- Neuroleptic Malignant Syndrome (NMS) – mostly typical antipsychotics
  - Hyperthermia, Muscle rigidity, parkinsonian symptoms, catatonic stupor, neurogical signs, elevated (CPK) creatine phosphokinase (discontinue antipsychotic, iv. Dantrolene, cooling, rehydration, monitor CPK)
- Lyell's Syndrome (Toxic Epidermal Necrolysis) – lamotrigine, carbamazepine
  - It is characterized by the detachment of the top layer of skin (the epidermis) from the lower layers (the dermis) all over the body -> must be treated in a dermatology unit

Severe side effects of psychotropic medication II.



• ECT ? –> Very bad reputation, a symbol of the misuse of psychiatric treatments

In fact:

- Allowed ONLY in Anesthesia. This is the reason, that ECT is a third line solution.
- No severe side-effects (temporal short term memory problems), in most cases patients do not report any inconveniences at all
- Proved to be effective in the most severe cases of depression, negativism in schizphrenia or catatonia
- Mechanism is unknown...

“To do” in emergency situations 1: diagnosis

1. Providing safety (restrain if necessary)
2. Careful physical examination and history taking
3. Laboratory: serum ions, glucose, hepatic, renal, and pancreatic functions, blood cells, hemostasis
4. Toxicological screening
5. Brain scan (CT, MRI), if needed
7. Supplementary investigations:
   - chest X-ray, ECG, abdominal ultrasonography
   - endocrinology (thyroid and adrenomedullary gland)
   - vitamins (deficiency of thiamine, B12, folate)
   - neuroinfection and inflammation (cerebrospinal fluid sample)

“To do” 2: Therapy, part A

1. Treat the causes (e.g. organ failure, brain pathology)
2. High potency **antipsychotics:** haloperidol 5-10 mg (p.o., i.m., i.v.)
3. **Benzodiazepines:** lorazepam 2-4 mg, clonazepam 0.5-2 mg
4. Electroconvulsive therapy (treatment resistant negativism without organic causes)
5. Avoid benzodiazepines in youth and in elderly (extreme sedation, respiratory depression, and paradox reaction), start with lower doses, alternative: Tiaprid or Risperidone for agitated eldelry

“To do” 3: Therapy, part B

1. In **stimulant intoxication** (cocaine and amphetamine derivates) avoid antipsychotics because of the risk of cardiac side effects and hyperthermia
2. In stimulant intoxication prefer benzodiazepines and beta blockers if needed
3. In **oversedated patients** with unknown etiology try naloxone (opiate antagonist) and flumazenile (benzodiazepine antagonist)
4. In patients with antipsychotic-induced **dystonia** and **akathisia** use anticholinergic drugs and benzodiazepines

‘Final message’

Alarming signs in psychiatry:

- Fluctuation of vigility (hypo-, hypervigility)
- Impaired attention (sustaining, focusing, shifting)
- Disorientation (in time, space, and person)
- Together with neurological signs !!!

+ Acute onset (hours or days)

Must find the cause!!!
(It is due to general medical condition)

Thank you for your attention!