Emergency psychiatry

by Gábor Csukly

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There are 5 main possibilities 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 a **severe mental disorder** (e.g. schizophrenia, bipolar disorder, drug induced psychosis , BPSD)
4. **Substance misuse**
5. **Psychosocial crisis**

- ‘When the medication is the source of the problem’

Severe **side effects of psychotropic medication**

Emergency psychiatry 'What to do?'

How to start?

- What are the signs?
  - Physical examination to assess neurological symptoms
  - Basic questions to assess psychopathology
- History taking (patient and others)
- Laboratory tests

Here we should have some hypotheses

- Differential Diagnostic questions (**General medical conditions?**)
- If needed: Brain Scan (CT, MRI)

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

Diagnosis

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

Case Report

General medical conditions – Without delirium

- Family doctor referred the patient to psychiatry with the diagnosis of depression
- Age=44, negative psychiatric history
- Lack of motivation, depressed mood, apathy, feeling generally unwell, slow thinking and speech, but oriented (symptoms developed through days)
- Mild inflammation signs in the laboratory test

Few days later patient developed drowsiness, delirium and neck rigidity
Consultation with neurologist: encephalitis/meningitis?

Diagnosis: (HIV) encephalitis

Symptoms due to general medical conditions – Without delirium

Most frequent syndromes:

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

- They can cause various symptoms very similar to mental disorders (delusions, affective and cognitive symptoms, anxiety)
- These are potentially dangerous states also due to the psychiatric symptoms besides the syndrome beyond.
- In the beginning without delirium, these conditions cannot be differentiated easily from mental disorders. Acute onset! No psychiatric history!
- Developing delirium later

Case Report

Delirium caused by general medical conditions

- Internist asked for the psychiatric consultation in the evening (8.30 pm, summer)
- 81 years old woman admitted 4 days ago, diagnosis of pneumonia was confirmed by X-ray, and the treatment has been started
- Negative psychiatric history
- Leading Symptoms: confusion; hypervigil state, impaired attention; agitation; disorganized speech and behavior
- What should we ask first from the patient and from the internist?

Diagnosis: Delirium caused by infection and possible dehydration.

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 weeks)
- Undetected in many cases, hence frequency is underestimated
- In hospitals this is the most common cause for a psychiatric consultation

General medical conditions
Delirium – Symptoms

It is a syndrome not a disease, and **always** caused by general medical conditions

A

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

B

- Disorientation/B (in time, space, and person)
- Impaired memory functions/B
- Form of thinking: incoherence /B
- Perception disturbances (illusions, hallucinations) /B
- Psychomotor symptoms: stupor – restlessness, agitation /B

C

- Acute onset/C (differential diagnosis!)

Delirium – Differential Diagnosis

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

Sometimes we can detect similar symptoms, but..

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

  /Sometimes patients with schizophrenia can develop symptoms like catatonic stupor which may look like as if the patient would be hypovigil./

Delirium is often a comorbid state, detected with other psychiatric disorders together, e.g. with dementias

Delirium – Causes

- 1a.) **Metabolic disturbances** 'Your Brain does not like few sugar, few water or few oxygen' – (hypoxia, anemia, hypoglycemia, acid-base disturbances, dehydration, electrolyte disturbances, kidney failure, liver disease)
- 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**

Neurotransmitter disturbances (cholinergic deficiency)

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

Delirium – Intoxication and Withdrawal

Two frequent causes of delirium are substance intoxication and withdrawal.

Intoxication:

- Delirium starts minutes (stimulants) or hours (alcohol, hallucinogens) after taking the substance
- … and ends with the end of intoxication
- It can be caused by toxins (CO2, CO, pesticides), or *drugs like antipsychotics (Clozapine), anaelgetics, sedatives, anti-parkinsonian medication (procyclidine, biperiden), lithium or certain antidepressants (clomipramine) with anticholinergic effects

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/younger 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

Case Report

Delirium caused by multiple medical conditions

- Ambulance brought the homeless patient, who was found on the street, could not stand up due to severe tremor
- Ambulance detected no fever, or other medical conditions (no cardiac failure or hypoglycemia) except chronic alcoholism and alcohol withdrawal, which is extremely frequent in Hungary
- Diagnosis: Alcohol Withdrawal -> Admitted to psychiatry
- Patient developed fever 90 minutes after admission, and died 30 minutes later (resuscitation was unsuccessful)

Post mortem diagnosis was sepsis which originated from a pyelonephritis

Delirium – Course of treatment

a) First, we have to assess and **monitor** life threatening complications (e.g.: hypokalaemia, arrhythmias, inflammation, head trauma) and treat them!

b) Eliminate psychiatric symptoms (sometimes, e.g. the patient is agitated, this must come first)

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

d) Consult 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 ward.

Delirium – Minimizing the contributing factors

Inflammations, dehydration, electrolyte disturbances are not only causes, but consequences of delirium. 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
- 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
- Ease the pain! 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 (Clonazepam or Lorazepam) 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)
  - Avoid anticholinergic drugs (e.g.: Clozapine)
- Alcohol withdrawal: Give also Vitamin B_6
- In elderly patients avoid using BZDs if it is possible or reduce the doses significantly!
  - Haloperidol vs. Atypical Antipsychotics** (Risperisone, Tiaprid, Quetiapine) – increased risk of complications (e.g.:Pneumonia)!
  - 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 attention to nursing as well, it may help you to decrease the dose of psychotropics! Especially important in patients with dementia.

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

http://www.guideline.gov

Emergency due to severe mental disorders

Most frequent disorders:

1. Schizophrenia
2. Drug induced psychosis
3. Affective disorders: Manic and depressed episodes in Bipolar Disorder
4. Behavioral and Psychotic Symptoms in 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
- Exhaustion
- Negativism: poverty of speech, movement, motivation
- Strong anxiety
- Impulsive reactions: self-harm (suicide!) and aggression

No insight and failure to cooperate and to accept help

Examples (Schizophrenia)

The most typical problematic scenarios (symptoms):

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

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

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
- Impulsive reactions: self-harm and aggression

No insight and failure to cooperate and to accept help

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

Case Report (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 („to relax”). 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 improved quickly.

Sometimes these patients must be kept in a psychiatric ward during psychotic episode to protect them from society…

Case Report (Drug Induced Psychosis)

Drug induced psychosis is an emerging problem

2.) The first psychotic episode of a 35 years old actor was induced by magic mushrooms (psylocibin) when he was 21. Since then he has been 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.

Many years later it turned out that he had been using drugs (mainly cannabis) continuously. 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.

Differentiation between schizophrenia and drug induced psychosis is not always easy

Case Report (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 sufficient, 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…!"

Children in a younger age use designer drugs year by year. More frequent even in primary school!

2. Drug Induced Psychosis

Any schizophrenia-like symptom may be presented! The dangers are very similar either. (aggression, risk of suicide)

A. In general, symptoms of drug intoxication improve as the drug is eliminated from the body.
B. 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, etc…)

➢In many cases patients give a good and quick reaction to antipsychotic medication, in other cases it turns into a schizophrenic process.

Emergency Treatment of Psychosis

- Psychotic symptoms are to be treated with antipsychotics im. and optionally with benzodiazepines im. or iv.
- If the patient is violent and severely agitated, the first choice is frequently Haloperidol im. or in solution (5-20mg/day)
- In milder cases, atypical antipsychotics with better side-effect profiles can be good alternatives: Risperidone sol., Aripiprazole im., Olanzapine im. (BZDs cannot be given with im. olanzapine)

Case Report (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 non-restricted ward.

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 afterwards to the female patient. The woman with BPD 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 female patient with BPD was very lucky: she had not been infected.

3. Affective disorders: Unipolar Depression and Bipolar Disorder

Affective disorders can cause emergeny case, due to the

Increased risk of suicide in depressed episodes

- Negative thoughts
- Anhedonia
- Feeling of Hopelessness and helplessness
- Lack of motivation! (Antidepressant issue!)

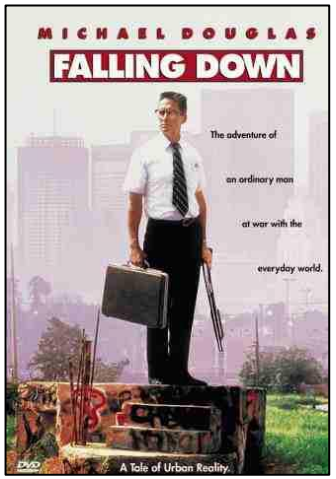
Treatment: Antidepressants – Hospitalization – Antipsychotics

and heteroaggression in manic episodes

- Megalomaniac
- Agitated
- Irritated

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

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

Suicidal ideation:
- Frequent, intense?
- Any Plan? Method: lethal and available?
- What holds him/her back? (e.g. religion or children)

History of attempts?

Health:
- Chronic illness
- Hypochondriac (delusions)
- Substance abuse

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

Case Report

Behavioral and Psychological Symptoms in Dementia (BPSD)

- Internist called the psychiatric consultation
- The patient (Age=76, no psychiatric history) had been treated with bradycardia, and reached remission
- One day before discharge the patient told his daughter (working as nurse), that he heard other people talking about his family in the hospital , and he learnt that his daughter brought shame to the family by being in a criminal gang
- Later he tried to commit suicide by jumping out of the window
- Therapy: Small dose of atypical antipsychotic (risperidone), and admission to resticrated ward due to increased suicidal risk
- Since onset was very acute, the prognosis was relatively good

4. Behavioral and Psychotic Symptoms in Dementia (BPSD)

Dementias cause emergency situation frequently due to agitation, psychosis and aggression.

- Incidence of Dementias: 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 *
- Time course of the Symptoms: In the early phase the affective symptoms dominate, later the behavioral 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

Behavioral and Psychotic Symptoms in Dementia (BPSD)

Behavioral symptoms:

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

Psychotic symptoms („schizophrenia like" 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

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

Psychosis in dementia and schizophrenia

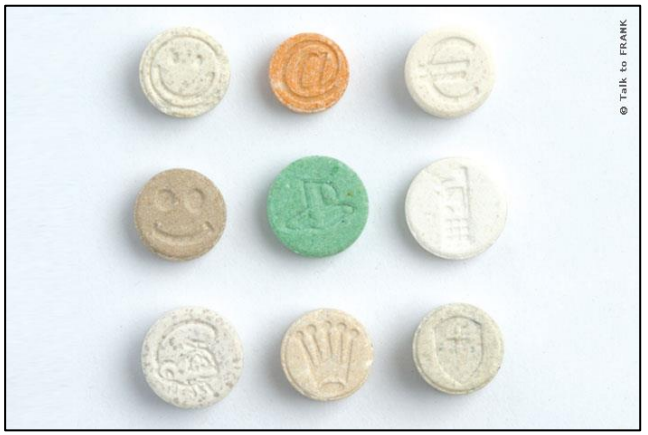
Sometimes, if medical records are not available, psychosis in dementia (e.g. ALZ) can be confused with schizophrenia in elderly. The following table may help to differentiate.

	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	Often not neccessary	Yes
Optimal AP dose compared to younger adult patients with sch.	15-25%	40-60%

The basic rules of BPSD therapy

- Psychotic symptoms (delusions, hallucinations) and psychomotor agitation can be treated with small dose of antipsychotic medication (prefer atypical ones) ~25% of dose relative to young patients with schizophrenia
- Contrarily to Schizophrenia: Try to decrease the dose as soon as possible, and later stop pharmacological treatment if symptoms improve!
- Avoid BZDs if it is possible; if not, use smaller doses (respiratory depression; these patients can acculumulate BZDs which can lead to stupor or coma)
- Depression – lower doses of SSRIs can be used if dementia is not severe, but Discontinue SSRIs in case of agitation or delirium. Trazodone can be a good alternative even in dementia.

5. Substance misuse



The 2 major groups of drugs are CNS depressants and stimulants.

- 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 (and the many newer ones..)
  - 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 – patient must be referred to ICU

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

Drug Withdrawal

We can say that the symptoms of withdrawal are somewhat the opposite to the effects of the given subtance. The withdrawal of these CNS depressants (heroin and alcohol) therefore somewhat similar to the symptoms of a stimulant.

- Alcohol
  - Sweating, Tremor, Anxiety
  - Agitated, aggressive
  - Delirium tremens (Life Threatening!!!): hallucinations, altered consciousness, impaired attention, disorientation, hyper- or hypovigility, tachycardia, high blood pressure, **hypokalaemia (arrytmias)**
- Heroin
  - Not directly life threatening, but dangerous!
  - Agitated, aggressive
  - Muscle ache
  - Increased tearing, sweating, yawning, runny nose
  - Insomnia

Later: diarrhea, nausea, vomiting

Case Report (Psychosocial crisis)

Psychosocial crisis is the unbalance between stress and coping skills.

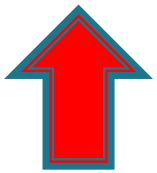
18 years old male high school student, no psychiatric history. Chief complaints were auto- end heteroaggressive thoughts, lack of motivation, depressive mode, worsening results in school. He comes with his parents and talks about the heteroaggressive thoughts in details. Parents were very supportive toward the patient but had a quarrel with each other during the interview.

After all it turned out, that his parents has just divorced, his father moved off last summer exactly the same time as the symtomps started. In many cases patients do not mention the real stressors even if they seem to be obvious.

Symptoms due to **Psychosocial crisis**

Psychosocial CRISIS is the unbalance between stress and coping skills

Stress requires the mobilization of energy to overcome difficulties



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

Internal: activation of psychopathology (depressive symptoms, 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

Instead of coping the patient react with maladaptive behavior: **The 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

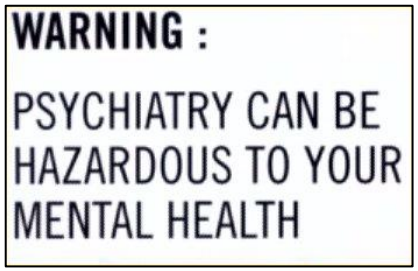
"The first milestone on the road to hell": the above symptoms may lead to declining social functions, loss of job and support, isolation, shift to the periphery of society, and slow self-destruction (vicious cycle!)

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?

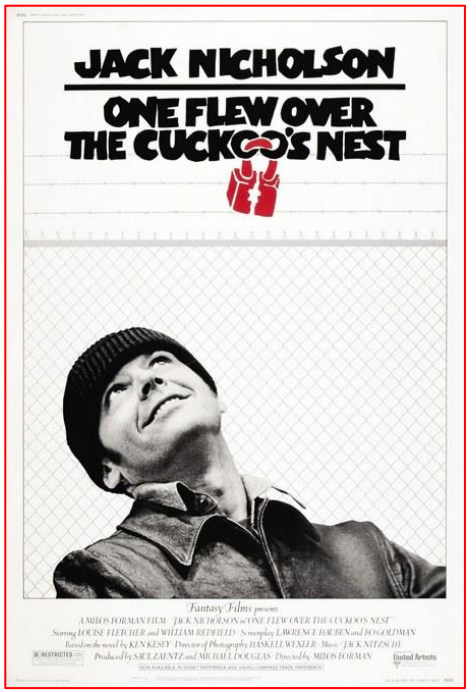
1. Recognition of **crisis signals** (closed attitude, rejection, lack of eye contact, denial, and hopelessness)
2. **Understanding, acceptance**, and warm milieu
3. There is no need to immediately solve the situation, no direct advice, just **listen** and devote time and patience
4. Be a human being and not cold professional - **Empathy: try to understand the feelings of the patient -** But keep boundaries!
5. Use the **words of the patients**
6. Offer **alternative explanations** (basic cognitive psychotherapy)
7. Evaluate psychiatric disorders and **suicide risk**
   - **Mild cases**: **Refer the patient to social and psychological support services**
   - **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
- Clozapine – agranulocytocis -> consult with hematologist!
- Acute dystonia – mostly typical antipsychotics: decrease dose + biperiden or benztropine im.
- Neuroleptic Malignant Syndrome (NMS) – mostly typical antipsychotics
  - Hyperthermia, Muscle rigidity, parkinsonian symptoms, catatonic stupor, neurogical signs, elevated creatine phosphokinase (CPK) - discontinue antipsychotic, iv. Dantrolene, cooling, rehydration, monitor CPK ->ICU
- 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 or in an ICU

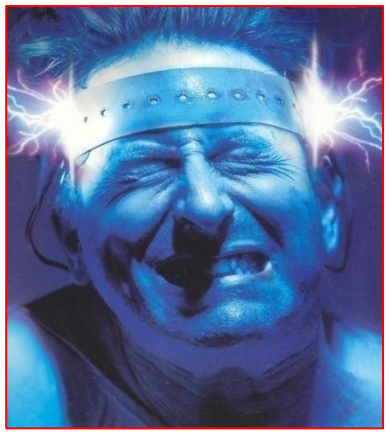
Severe side effects of psychotropic medication II.



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

In fact:

- Allowed ONLY in Anesthesia. This is why ECT is still a third line solution.
- No severe side-effects (temporal short term memory problems), in most cases patients do not report any complaints at all
- Proved to be **very** effective in the most severe, treatment resistant cases of depression and in many cases of negativism in schizophrenia or catatonia
-Even used in an outpatient setting (e.g.: USA, Belgium) !!!
- exact mechanism is unknown, it likely operates through serotoninergic neurotransmission



‘Final message’

Alarming signs in case of psychiatric symptoms:

- Fluctuation of vigility (hypo-, hypervigility)
- Disorientation (in time, space, and person)

+ Acute onset (hours or days)

Delirium / General Medical Condition
Must find the cause(s), not just treat the symptoms!!!

Thank you for your attention!

Delirium – Assessing etiology and complications

- **History taking** (delirium or substance misuse in the history) – differential diagnosis (e.g.: dementia) / onset: When did the symptoms start?
- **Physical examination** (general and neurological symptoms) – exsiccosis (decreased skin turgor, dry and coated tongue) or focal neurological signs
- **Monitor** pulse rate, blood pressure, and oxygen saturation
- **Laboratory tests**: Sodium, Potassium, Glucose, Carbamide, Creatinine, Liver enzymes, Ammonia, Full blood count
- **ECG** (arrhythmias), **Chest X-Ray** (cause of respiratory failure), **Urine culture** (infection)

In special cases:

- **EEG** (seizures), **CT** (head trauma), **MRI** (tumor?), **lumbar puncture and/or blood culture** (CNS infection?)

“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