



Psychiatrická klinika LFUK a UNB, Bratislava

## ORGANIC DISORDERS SUBSTANCE USE DISORDERS

### Psychiatriy 2 – Practical # 1

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## ORGANIC DISORDERS

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### Mental disorders according to „etiology“

- Endogenous
- Psychoreactive
- **Organic** – reason is biological, physical, with demonstrable CNS pathology affecting
  - 1) primarily the brain (**organic disorders**)
  - 2) primarily the „whole body“ or other organ systems (**somatogenic, symptomatic disorders**)

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## Causes of organic mental disorders

- **Organic** (affecting primarily the brain)
  - local lesions (brain tumors, injuries, bleedings...)
  - diffuse affections (inflammation, neurodegeneration...)
- **Somatogenic, symptomatic**
  - intoxications (acute – e.g. CO, chronic – e.g. alcohol)
  - metabolic disturbances (diabetes, renal or hepatic failure, endocrinological disorders...)
  - cardiovascular diseases or respiratory diseases leading to cerebral hypoxia, infections
  - medication-induced (e.g. corticoids, L-dopa, antiasthmatics, contraceptives...)

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## Symptoms of organic mental disorders

- **TYPICAL / SPECIFIC**
  - **disturbances of consciousness and cognitive functions**
    - attention
    - memory
    - thinking
    - intelligence (comprehension, gnosis, learning, judgment...)
- **NONSPECIFIC**
  - disturbances of emotions, will and acting, drives, perception, personality

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## Organic mental disorders – syndromes

**Severity:** psychotic / nonpsychotic  
**Course:** transient / persistent

### TYPICAL

- **Syndromes of disturbances of consciousness** (confusion, delirium, obnubilation)
- **Amnesic syndrome** (acute, chronic)
- **Syndrome of dementia**

### OTHER

- Depressive or manic syndrome, paranoid syndrome – nearly whatever, always with some degree of cognitive disturbances in the background

**Every patient with psychiatric symptomatology requires a thorough physical examination to rule out organic etiology before a diagnosis of other (nonorganic) disease is established.**

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## Symptomatic and organic mental disorders in ICD-10 (F00-F09) „mental disorders due to physical illness“

- **F00** Dementia of Alzheimer type
- **F01** Vascular dementia
- **F02** Dementia otherwise specified (Pick disease, Huntington disease, Creutzfeld-Jacob disease, Parkinson disease...)
- **F03** Unspecified dementia
- **F04** Organic amnesic syndrome not induced by alcohol or other psychoactive substances
- **F05** Delirium not induced by alcohol or other psychoactive substances
- **F06, F07** Other mental disorders due to brain damage and dysfunction or to the physical disease (hallucinatory, affective, delusional (mostly paranoid) disorders, personality changes...)

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## Syndrome of dementia

Acquired disturbance of intelligence (in the age  $\geq$  2 years).

„Dementia is a clinical syndrome of **progressive deterioration of cognitive functions, causing significant impairment of routine daily activities in person without quantitative or qualitative disturbance of consciousness and lasting longer than three months.**“

### Severity

**Mild (SMMSE 25-21):** problems with car driving, finances, shopping, needs help under mild stress, can live independently

**Moderate: (SMMSE 20-10):** needs supervision (dressing, eating, hygiene, marked memory loss, amnesic aphasia

**Severe (SMMSE 9-0):** needs systematic supervision, nursing care, disturbances of behavior, neurological symptoms

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## Classification of dementias according to known or probable etiology

Primary degenerative dementias	Vascular dementias	Secondary dementias
DAT dementia of Alzheimer type  FTD frontotemporal dementia  LBD dementia with Lewy bodies  Dementia in m. Parkinson	MID dementia due to microvascular atherosclerosis of the brain  m. Binswanger  post-stroke dementia	Metabolic Endocrine Haematologic Cardiovascular Respiratory Toxic Posttraumatic Infectious (CJD...) Brain tumors Vitamin deficiencies

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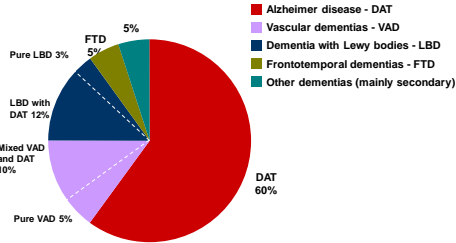
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## Prevalence of the most frequent dementias

### Prevalence of all types of dementia in:

- General population 1%
- Geriatric population 5%
- Increasing with age (over 80 years 20%, 90 years and older 40-45%)



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## Symptoms of dementia syndrome

### Cognitive

#### Disturbances of:

- attention
- memory
- thinking and judgment
- orientation
- language
- learning
- comprehension
- praxia
- executive functions

### Noncognitive

#### „psychopathological“

- depression, anxiety
- apathy, other affective
- delusions
- hallucinations
- misidentification
- agitation, aggression
- sleep disturbances
- eating disturbances

#### „behavioral“

- nonappreciable behaviour, aberrant motoric reactions

### Functional

#### Problems with:

- complex activities (job, driving, ...)
- household
- self-care
- incontinence
- communication skills
- independence in everyday life

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## Diagnostics of dementia – 3 basic steps:

- identification of **dementia syndrome**
- **ruling out** all potentially reversible causes, i.e. identification of **secondary dementias**
- **nosological (or probable nosological) diagnosis** of dementia and establishing of its **level (severity)**

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## Diagnostics of dementia syndrome

### Clinical examination

- very important and often the only valid is **objective history**

### History of present illness

- attention and memory problems, at the beginning short-term, difficulties in learning new information or practical skills, in planning activities, in language (expression and comprehension), in higher emotions (behavioral problems), in orientation, insight, reasoning, judgment and problem solving...

### Detailed psychopathology - characteristics of onset and course

- development of the symptoms is usually slowly progredient (continually – e.g. DAT or stepwise – e.g. MID)

### Psychometric instruments

### Physical examination (ruling out secondary dementias, nosological and differential diagnosis of neurodegenerative and vascular dementias)

- lab tests, EEG, CT, MRI,...

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## Psychometric instruments for dementia

### NOT DIAGNOSTIC TOOLS!!!

### Cognitive functions

- SMMSE (Standardized Mini-Mental State Examination) – screening; in well educated person false negative in mild dementia
- CDT (Clock Drawing Task) – executive functions
- MoCA (Montreal Cognitive Assessment), ACE-R (Addenbrooke's Cognitive Examination – Revised) – for MCI, milder dementias
- WMS (Wechsler Memory Scale), WAIS (Wechsler Adult Intelligence Scale) – detailed information

### Noncognitive symptoms

- NPI (Neuropsychiatric Inventory)

### Functional symptoms

- ADL (Activities of Daily Living), IADL (Instrumental Activities of Daily Living)

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## Differential diagnosis of dementias

Initial diagnosis	Early disturbances of memory	Other characteristics	Progress in course	Possible diagnosis
Syndrome of dementia	Yes	3A : apraxia, agnosia, aphasia	Continual	DAT (Dementia of Alzheimer type)
		Extrapyramidal signs, hallucinations – visual, falls, RBD (REM sleep Behavior Disorder)	Continual	LBD (Dementia with Lewy Bodies)
	No	Neurological symptoms, sec. parkinsonism	Stepwise	VAD (Vascular dementia)
		Behavioral Personality, communication	Continual	FTD (Frontotemporal dementia)

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## Treatment of dementias

- **Secondary dementias** – treatment of the cause!
- **Nonpharmacological approaches**
  - Psychological, behavioral (including training of preserved mental functions)
  - Environmental (preserve stable supporting environment and regimen)
  - Complementary (aromatherapy, pet-therapy...)
- **Pharmacotherapy**
  - Acetylcholinesterase inhibitors (donepezil, rivastigmine, galantamine)
  - Reversible partial antagonist of NMDA receptors – memantine
  - Nootropics, vasoactive substances
  - Symptomatic treatment of noncognitive symptoms: „start low, go slow“

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## SUBSTANCE USE DISORDERS (SUD)

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## Classification of substance use disorders in major classification system (ICD-10) F10-19

### Mental and behavioral problems due to use of:

- F10.x Alcohol
- F11.x Opioids
- F12.x Cannabinoids
- F13.x Sedatives or hypnotics
- F14.x Cocaine
- F15.x Other stimulants including caffeine
- F16.x Hallucinogens
- F17.x Tobacco
- F18.x Volatile solvents
- F19.x Multiple drug use and use of other psychoactive substances

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## Classification of substance use disorders in major classification system (ICD-10) F10-19

Type of substance use disorder coded as:

- F1x.0 Acute intoxication
- F1x.1 Harmful use
- F1x.2 Dependence
- F1x.3 Withdrawal state
- F1x.4 Withdrawal state with delirium
- F1x.5 Psychotic disorder (substance-induced)
- F1x.6 Amnestic syndrome (substance-induced)

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## 3 main types of substances according to their main effects

- **Stimulants**
  - Caffeine, Tobacco, Cocaine, Amphetamines, MDMA \*
- **Depressants**
  - Anxiolytics, Hypnotics, Sedatives, Alcohol, Heroin, Opioids, THC \*
- **Delirogenes / Hallucinogenes**
  - LSD, PCP, Psilocybin, Ketamine, Volatiles, THC \*, MDMA \*

\* Note that various substances may have multiple effects.

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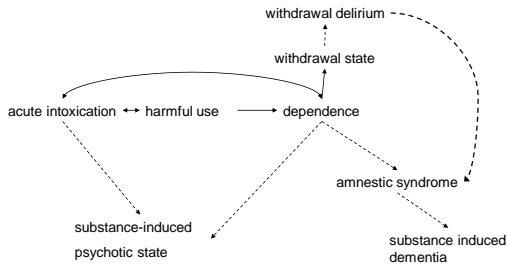
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## Typical course of SUD



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## Harmful use / Abuse

- Substance use responsible for physical or psychological harm, including impaired judgement or dysfunctional behaviour
- Pattern of use persisted for at least one month or has occurred repeatedly within a twelve-month period.
- Substance use pattern does not meet criteria for dependence syndrome

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## Dependence syndrome

- **craving**
  - strong desire or sense of compulsion to take the substance
- **loss of control of consumption**
  - substance being often taken in larger amounts or over a longer period than intended, or unsuccessful effort to cut down or control substance use
- **increased tolerance**
  - ↑ dose = the same effect, ~ dose = lower effect
- **withdrawal state**
  - unpleasant physical & psychic state when substance use is reduced or ceased
- **narrowing of the drug-taking repertoire and drug-taking ritual**
  - switch to more concentrated drug / more invasively use of it
- **preoccupation with substance use**
  - important alternative pleasures or interests being given up or reduced because of substance use; or a great deal of time being spent in activities necessary to obtain the substance, take the substance, or recover from its effects
- **persistence of substance use despite harmful consequences**
  - psychic, somatic or social problems

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## Acute intoxication

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|---|---|
| <ul style="list-style-type: none"><li>■ <b>Stimulants</b><ul style="list-style-type: none"><li>□ elevated / euphoric mood</li><li>□ lability of mood</li><li>□ increased attention</li><li>□ grandiose / megalomaniac beliefs</li><li>□ hypervigilance</li><li>□ psychomotor agitation / aggression</li><li>□ decreased need for sleep</li><li>□ decreased appetite</li><li>□ increased libido</li><li>□ vegetative system: sympathetic-like effect</li></ul></li></ul> | <ul style="list-style-type: none"><li>■ <b>Depressants</b><ul style="list-style-type: none"><li>□ euphoric / apathic mood</li><li>□ impaired attention</li><li>□ impaired judgement</li><li>□ impaired memory</li><li>□ impaired consciousness</li><li>□ psychomotor retardation</li><li>□ prolonged sleep</li><li>□ increased appetite</li><li>□ decreased (no change) libido</li><li>□ vegetative system: parasympathetic-like effect</li></ul></li></ul> |
|---|---|

Note that various substances may have different intoxication signs.

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## Withdrawal state – generally opposite to intoxication

- **Stimulants**
  - craving
  - depressed mood
  - impaired attention
  - fatigue
  - hypersomnia
- **Depressants**
  - craving
  - irritable mood
  - restlessness
  - impaired attention
  - headache / diarrhoea / nausea
  - hyposomnia
  - tachycardia or hypertension

Note that various substances may have different withdrawal signs.

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## Common objective findings in „chronic“ substance users

- Increased estimated age (generally all substance users)
- Cachexia (i.v. drug administration, psychostimulants)
- HCV / HIV infections (i.v. drug administration)
- Respiratory problems (drugs administered by smoking & sniffing)
- Cardiomyopathy & Ischemic heart disease (alcohol, cocaine, psychostimulants)
- Hepatopathy (alcohol, benzodiazepines, volatile solvents)
- Polyneuropathy (alcohol, heroine)
- Skin lesions (metamphetamine, heroine)
- Unaccessible veins (i.v. drug administration)
- Abnormal pupils (opiates)
- Nasal septum damage (cocaine)
- Elevated transaminases (alcohol)
- Macrocytic anemia (alcohol)

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## Investigation procedures

- In search for substance use disorder...
  - detailed interview regarding substance use
  - history of health records (typical medical co-conditions)
  - physical examination (search for visible clues of substance use)
  - toxicology (positivity on specific substance)
  - blood count (anemia)
  - blood biochemistry – (↑↓ enzymes, ↑↓ minerals, ↑↓ glycemia)
  - USG (liver / kidney structural impairment)
  - CT / MRI (brain atrophy)

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## Focus on alcohol – acute intoxication

### Psychic (dysfunctional behavior):

- disinhibition, argumentativeness, aggression lability of mood, impaired attention, impaired judgment, interference with personal functioning

### Somatic:

- unsteady gait, difficulty standing, slurred speech, nystagmus, decreased level of consciousness (sopor, coma), flushed face, conjunctival injection

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## Focus on alcohol - withdrawal state

- begins after reducing the alcohol consumption after long-term and excessive drinking
- begins 4-24 hours after last drink
- hyperexcitatory state in CNS
- signs:
  - vegetative signs (tremor, sweating, tachycardia, hypertension)
  - nausea, vomiting
  - headache, insomnia, hyperhexia, insomnia
  - epileptic seizures
  - psychomotor restlessness
  - anxious or depressive mood, irritability
  - increased intrapsychic tension
- **therapy:** benzodiazepines, magnesium, fluids & minerals, B<sub>1</sub> vitamine

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## Focus on alcohol – withdrawal delirium (delirium tremens)

- progression of withdrawal syndrome
- sudden onset
- fluctuation in severity (worsening at night)
- last 3-7 days
- mortality treated ~ 5%, untreated ~ 20%
  - cardiac, hepatic failure, metabolic subversion, infection
- outcome in 5-15% patients: Korsakoff psychosis, Wernicke encephalopathy
- signs:
  - clouding of consciousness
  - disorientation
  - affective lability, anxiety
  - psychomotor restlessness, agitation, aggression
  - decreased concentration
  - illusions, hallucinations (microzoopsias, Lilliputian hallucinations)
  - thinking: delusions, disturbance of structure
  - amnesia for recent events
  - + vegetative sings of (noncomplicated) withdrawal state
- **therapy:** benzodiazepines, magnesium, incisive / atypical antipsychotics, fluids & minerals, B<sub>1</sub> vitamine, general supportive (symptomatic) therapy for delirium states with intensive monitoring

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## Focus on alcohol – Alcoholic hallucinosis

- substance induced psychotic disorder
- usually begins <2 weeks after last drink, lasts <6 months, can occur whenever during SUD (intoxication, withdrawal, late onset)
- **signs:**
  - no disturbance of consciousness
  - usually elementary auditory hallucinations (bangs or murmurs) can graduate to verbal auditory hallucinations (arguing voices), visual, scenic
  - secondary paranoid delusions
  - psychotic behavior
- **therapy:** antipsychotics

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## Focus on alcohol – Wernicke & Korsakoff

- **Wernicke encephalopathy**
- acute confusion, ataxic gait, nystagmus, ophthalmoplegia (n. III, n. IV), dysarthric speech, peripheral polyneuropathy, tachycardia, severe impairment of memory, orientation, judgement
- not exclusively present in alcohol-SUD only!
- can lead to dementia or death (15%)
- vitamin B1 (thiamine) deficiency - ↓ intake, absorption, ↓ liver storage => bleeding and secondary gliosis (grey matter), necrotic changes in the brain, atrophy of cerebellum
- Th: supplementation of thiamin
- **Korsakoff syndrome**
- amnesic-confabulatory syndrome
- impairment of short term memory, learning skills, retrograde amnesia, confabulations, disorientation, euphoric mood, hyperactivity, peripheral polyneuropathy/chronic
- disorder with poor prognosis
- atrophy of the brain
- 2/3 patients permanent memory deficit, dementia
- deficit of B vitamins (B1, B2, B6, B12)
- Th: long-term supplementation of B vitamins

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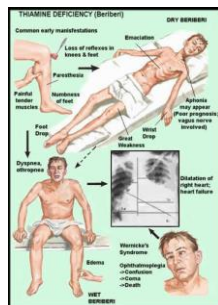
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**Note:**  
Wernicke & Korsakoff  
have similar signs to  
Beri-Beri disease (thiamine deficiency)



Netter, 2001

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## Focus on alcohol – Alcohol dementia

- 50-60% heavy drinkers – cognitive deficit
- impairment of short term memory, recall and consolidation memory, loss of feelings (ethic, esthetic, social)
- cortical atrophy, ventricular enlargement
- potentially reversible (partially)
- correlate with total length and amount of lifetime drinking, earlier in women
- Th: long-term supplementation of B vitamins, nootropics

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Any questions?

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