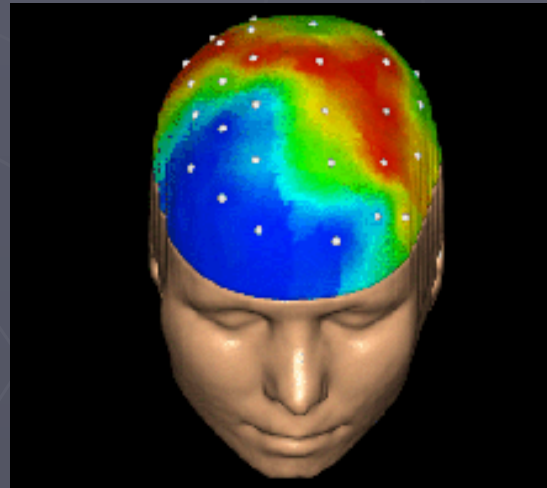


Organic mental disorders

Zoltán Hidas



What is organic?

- ▶ Neurology
- ▶ Psychiatry
- ▶ Organic psychosyndromes



- ▶ Organic (mental) disorders
- ▶ Functional disorders

Neuropsychiatry

- ▶ Biological psychiatry
- ▶ Cognitive neuroscience
- ▶ Neuropsychology
- ▶ (Neurology – Psychiatry)

- ▶ Neuropsychiatry
- ▶ Clinical neuroscience

DSM

- ▶ DSM – IV. Delirium, dementia, amnestic disorders and other cognitive disorders.
- ▶ DSM-5: Neurocognitive disorders:
 - Delirium, Major/mild neurocognitive disorder
- ▶ Mental disorders due to a medical condition



ICD 10

- ▶ Organic and symptomatic mental disorders
 - Dementia
 - Organic amnestic syndrome
 - Delirium
 - Other mental disorders caused by brain lesion and dysfunction or somatic disorder
 - ▶ Organic hallucinosis, organic catatonia, organic delusional disorder, organic mood disorder, organic anxiety disorder, etc.
- ▶ Mental and behavioural disorders caused by psychoactive substances

Etiology, causes, pathology

- ▶ Central nervous system
 - Neurodegeneration
 - Cerebrovascular origin
 - Inflammation, tumor
 - Demyelination
 - Epilepsy
 - Trauma
 - Other
- ▶ Outside the central nervous system
 - Endocrine
 - Metabolic, cardio-vascular diseases
 - Nutritional disturbance
 - Infection
- ▶ Drug intoxication, drug withdrawal
 - Alcohol, illegal drugs, medication

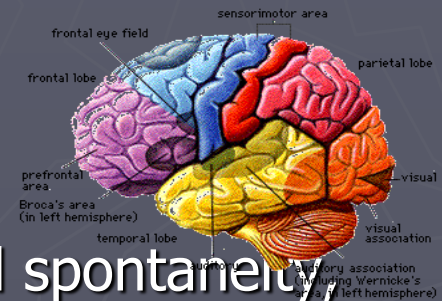


From neurological point of view...

- ▶ Cerebrovascular diseases
- ▶ Neurodegenerativ diseases
- ▶ Parkinson's disease, other movement dis.
- ▶ Epilepsy
- ▶ Head trauma –brain injuries
- ▶ Tumors
- ▶ Neuroinfections
- ▶ Neuroimmunology (multiple sclerosis)

Classification of syndromatology

- ▶ Acute – chronic
- ▶ Diffuse (global) – focal (local) - multifocal brain disfunction
- ▶ Lobe syndromes
 - **FRONTAL**
apathy, disinhibition, lack of initiative and spontaneity, motivation, perseveration, impulsivity
 - **TEMPORAL**
affective, aggression, fear, explosion, psychosis, disorientation
 - **PARIETAL**
gnostic and cognitive dysfunctions (alexia, acalculia, agraphia), apraxias



Delirium - Syndromatology

- ▶ Acute course – (sudden onset, short episode)
- ▶ Impairment of consciousness
- ▶ Global impairment of cognitive functions (memory, attention, orientation, thinking, etc.)
- ▶ Perceptual disturbance (multimodal illusions and hallucinations)
- ▶ Behavioural changes (agitation)
- ▶ Fluctuating course



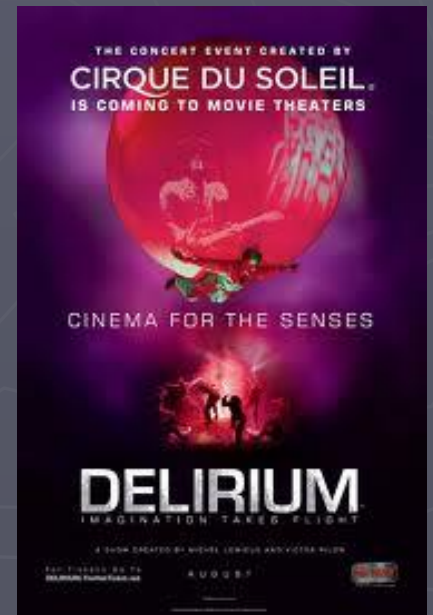
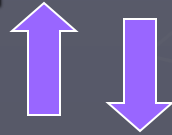
Delirium - Etiology

- ▶ Any cause, resulting in global dysfunction
- ▶ General medical condition (e.g. infection, metabolic reasons, hypoxia)
- ▶ Substance induced
- ▶ Multiple cause
- ▶ Therapy: Causal, symptomatological
(BZD, NL)



Etiology

- ▶ Etiological factors?
- ▶ Risk (predisposing) factors
- ▶ Trigger (precipitating) factors



- ▶ Hyperactive, hypoactive, mixed form

Risk factors 1.

- ▶ Age: 65+ sex: male
- ▶ Dementia (+++), other cognitive disorder
- ▶ Depression
- ▶ Vision-, hearing impairment
- ▶ Dehydration, malnutrition
- ▶ Medication (multiple drugs, psychoactive drugs), alcohol
- ▶ Immobility, pain, constipation
- ▶ Sleep deprivation

Saxena et al, 2009.

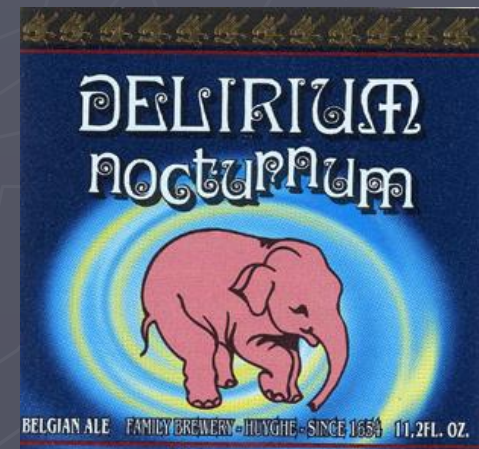
DELIRIUM
tremens



Risk factors 2.

► Somatic illnesses

- Severe illness
- Many illnesses
- Chronic liver or kidney failure
- Stroke, other neurological disorder
- Metabolic disorder
- Trauma, bone fracture
- Terminal state
- HIV infection



Saxena et al, 2009.

Precipitating 1.

- ▶ Comorbid disorders
 - Infection
 - Hypoxia
 - Severe acute disorder (pl. AMI)
 - Liver, kidney disorder
 - Urinary retention, constipation
 - Anaemia
 - Fever
 - Shock

Saxena et al, 2009.



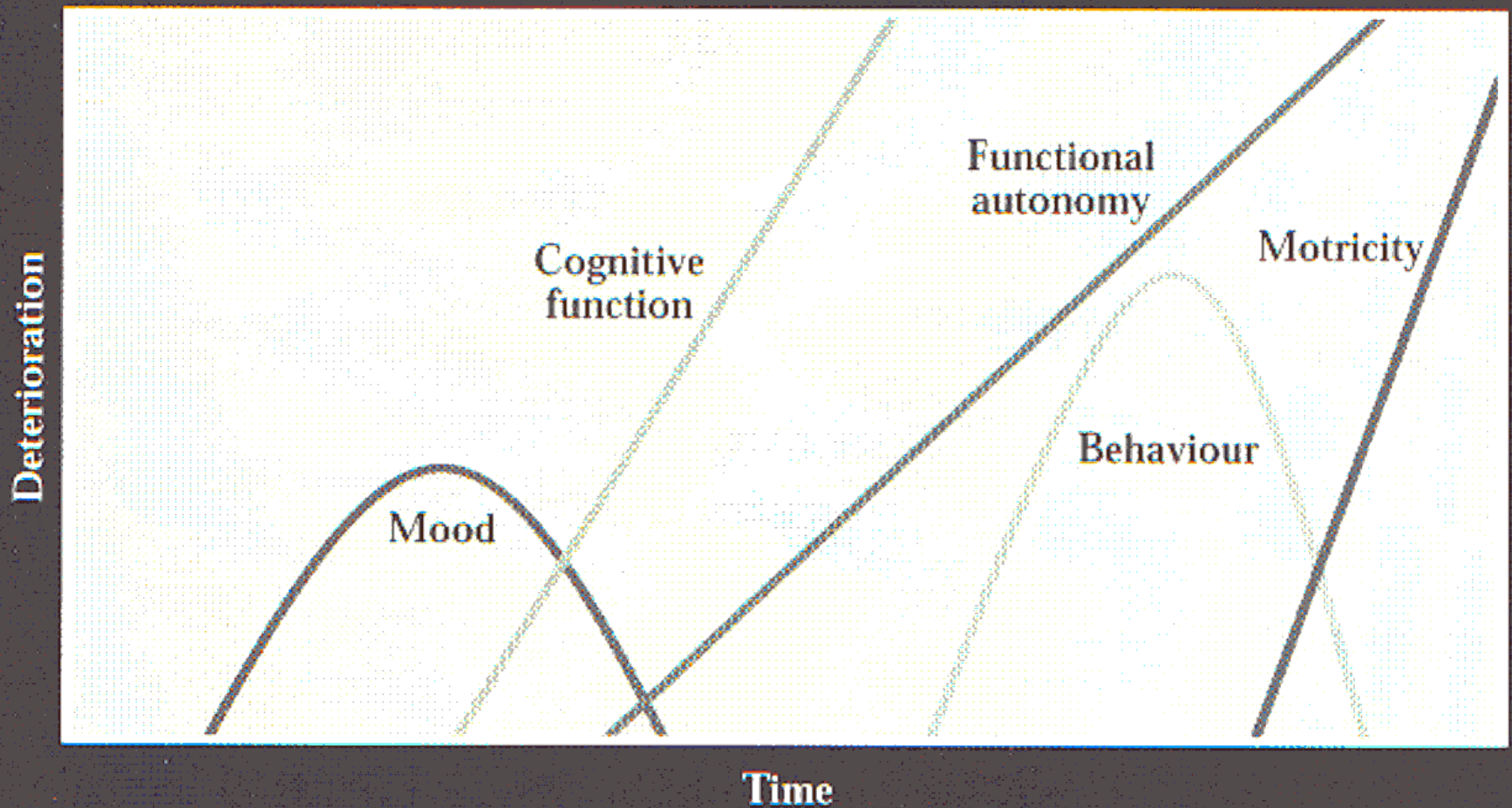
Precipitating factors 2.

- ▶ Iatrogenic complication
- ▶ Metabolic imbalance
- ▶ Neurological disease (head trauma)
- ▶ Surgery
- ▶ Medication
 - overdose, politherapy
 - sedatives, hypnotics, anticholinergic drugs, antiepileptics
- ▶ Enviromental factors (ICU, phycical restraint, bladder catheters, multiple/invasive manipulations, emotional stress)
- ▶ Pain

Dementia - Syndromatology

- ▶ Chronic course (10% above 65 y, 16-25% above 85 y)
- ▶ Multiple cognitive deficits incl. memory impairment (intelligence, learning, language, orientation, perception, attention, judgement, problem solving, social functioning)
- ▶ No impairment of consciousness
- ▶ Behavioural and psychological symptoms of dementia (BPSD)
- ▶ Progressive - static
- ▶ Reversible (15%) - irreversible

Symptomatic domains of typical AD over time



Gauthier et al (1996); Kertesz and Mohs (1996); Gélinas and Auer (1996); Eastwood and Reisberg (1996); Barclay et al (1985)

Cognitive/non-cognitive

- ▶ Non-cognitive symptoms
- ▶ Behavioural symptoms
- ▶ Psychological and behavioural symptoms in dementia (BPSD)
 - delusion, hallucination, depression, anxiety, agitation/aggression, euphoria/mania, disinhibition, irritability, apathy, motor behaviour

Dementia - Classification

▶ Severity

- Mild cognitive impairment (MCI)
- Mild dementia
- Moderate dementia
- Severe dementia

▶ Localization

- Cortical
- Subcortical

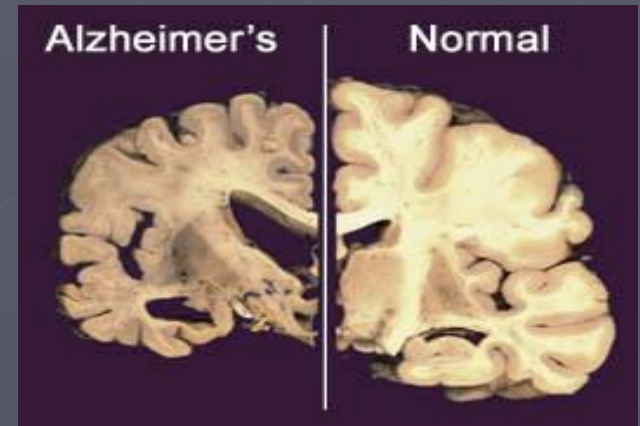
▶ Etiology

- Primary (neurodegenerative disorders)
- Secondary



Dementia -Etiology

- ▶ Alzheimers disease (60-70%)
- ▶ Vascular dementia (10-20%)
- ▶ Neurodegenerative disorders (FTD, Lewy body dis, Parkinson, Huntington, etc.)
- ▶ Drugs and toxins
- ▶ Intracranial masses
- ▶ Anoxia
- ▶ Trauma
- ▶ Infections (JCD, HIV, etc)
- ▶ Nutrition
- ▶ Metabolic
- ▶ Pseudodementia



Dementia - Diagnosis

- ▶ Signs and symptoms
- ▶ Laboratory data
- ▶ EEG, CT, MRI
- ▶ Psychological testing (MMS)



Dementia - Therapy

- ▶ Causal if possible
- ▶ Nootropics
- ▶ Neuroprotection
- ▶ AChEI (rivastigmine, donepezil, galantamin)
- ▶ Glutamate antagonists (Memantine)
- ▶ BPSD (anxiolitics, antidepressant, antipsychotics, etc.)
- ▶ Non-pharmacological interventions



Mental disorders due to a General Medical Condition (DSM)

- ▶ Psychotic disorder due to a general medical condition
- ▶ Mood disorder
- ▶ Anxiety disorder
- ▶ Sexual dysfunction
- ▶ Sleep disorder
- ▶ Catatonic disorder
- ▶ Personality change



Therapy in neuropsychiatry

- ▶ Pharmacotherapy
- ▶ Psychotherapy, psycho-social treatment
 - Improving cognitive abilities
 - Rehabilitation
 - Treating affective and anxiety symptoms
 - Treating other psychological symptoms

Pharmacotherapy in neuropsychiatry 1.

- ▶ Targets of pharmacotherapy
 - Etiological background
 - Progression
 - Psychiatric symptoms
 - ▶ Target symptom:
 - Cognitive
 - Agitation/aggression
 - Mood
 - Psychotic
 - Other behavioural
 - Neurologic symptoms

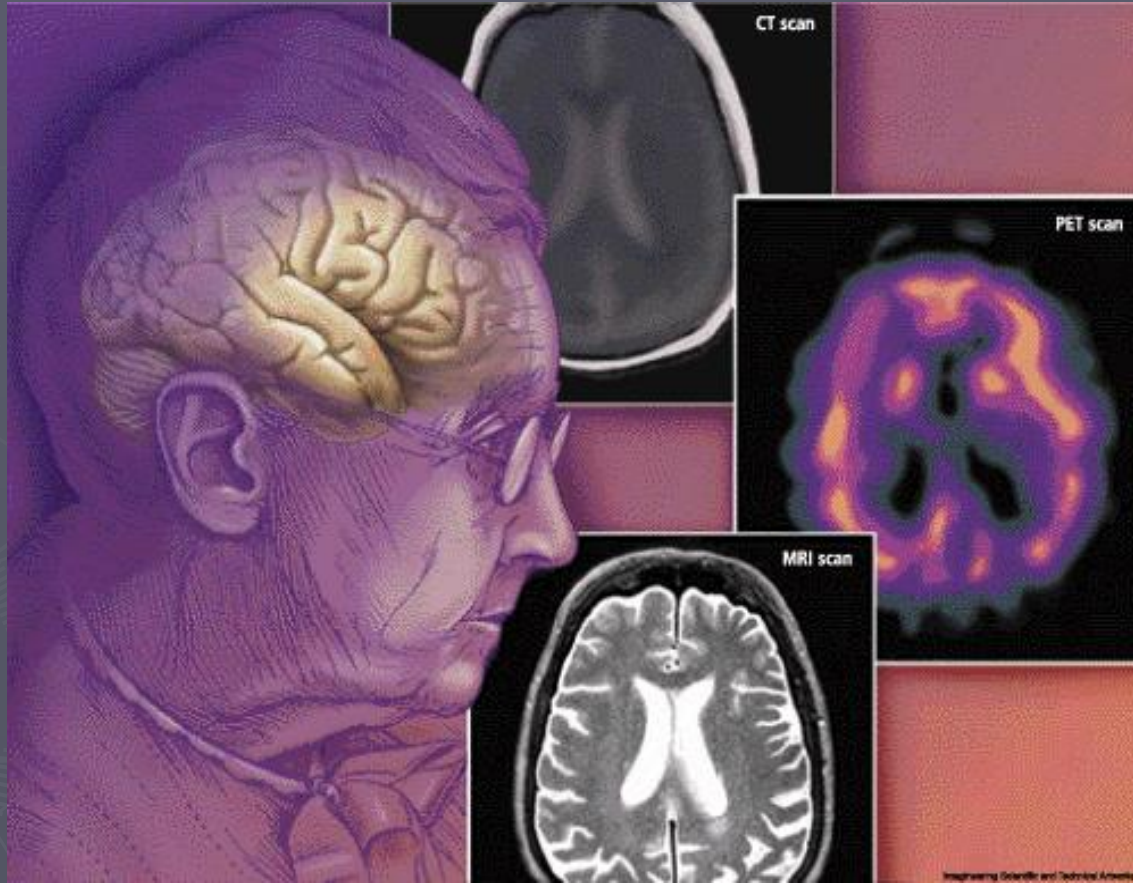
Pharmacotherapy in neuropsychiatry 2.

- ▶ Aspects of pharmacotherapy
 - Mental status
 - Neurological status
 - Social status
 - Etiological background
- ▶ Typical v. atypical symptoms

Pharmacotherapy in neuropsychiatry 3.

► Special aspects

- Age
- Polimorbidity
- Pharmacokinetics (interactions)
- Optimal dosing (+/-)
- Side effects (cognitive, other)



CT scan

PET scan

MRI scan

Imaging Science and Technical Aspects