



Movement Disorders- DYSKINESIAS

The basic sign of movement:

ABNORMAL

INVOLUNTARY



CLASSIFICATION

- A. OBSERVATION

- 1. TREMOR

- 2. DYSTONIA

- 3. CHOREA

- 4. BALLISM

- 5. TICS

- 6. MYOCLONUS



➤ B. **ETIOLOGY**

➤ 1. Hereditary d.

➤ 2. SECONDARY d.

➤ - Drug induced (neuroleptics)

➤ - Vascular (lacunar stroke)

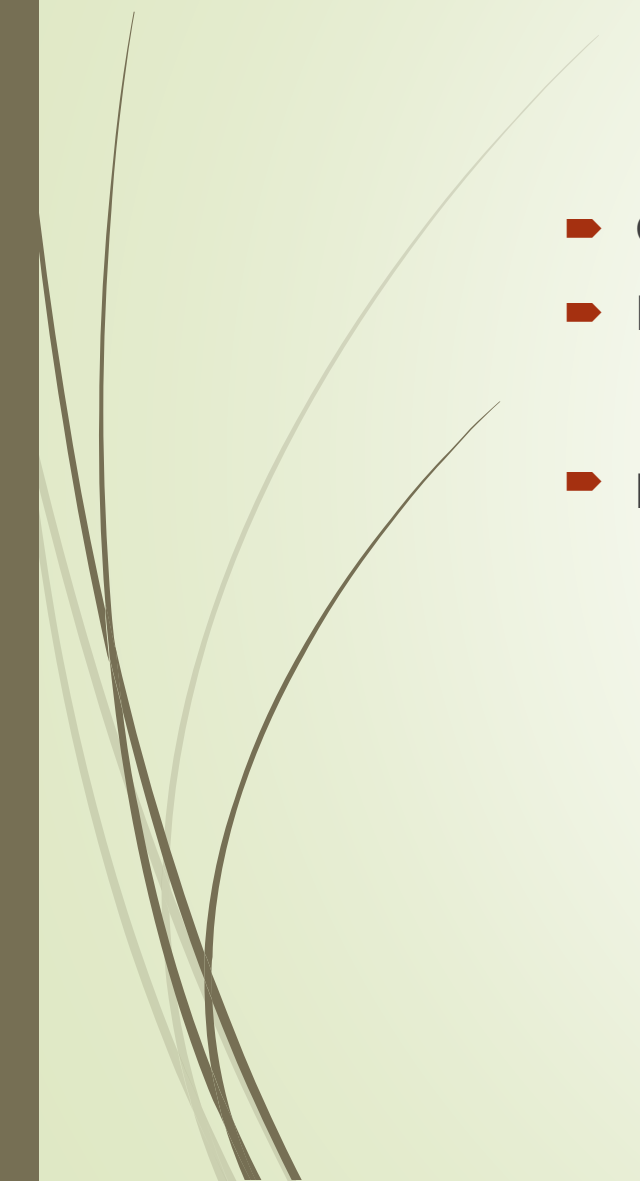
➤ - Metabolic and Endocrine (Wilson d., thyreopathy)

➤ - Immunologic (lupus erythematosus)

➤ - Psychogenic





TREMOR

- ▶ Continual
 - ▶ Rhythmic movement
 - ▶ pathologic sign in every age
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Classification

- ▶ According to:
- ▶ 1. POSITION
 - ▶ - rest or kinetic
- ▶ 2. LOKALIZATION
 - ▶ - focal (head,hands) to generalized
- ▶ 3. FREQUENCY
 - ▶ - slow, middle, serious
- ▶ 4. AMPLITUDE
 - ▶ - light, middle, serious

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- ▶ According to 5. ETIOLOGY :
 - ▶
 - ▶ Physiologic (fever, hypothermia)
 - ▶ Drug induced (antidepressants, antiasthmatics, AED)
 - ▶ Metabolic and Endocrine (hypoglycemia, hyperthyroidism)
 - ▶ Withdrawal syndrome (ethanol)



ESSENTIAL TREMOR

- ▶ The most frequent Dyskinesia (4%)
- ▶ The most common cause of pathologic tremor
- ▶ Mostly hereditary etiology
- ▶ Only monosymptomatic disease
- ▶ Tremor is kinetic, bilateral, mostly localized to hands
- ▶ Positive effect of ethanol abuse
- ▶ Long time of duration



Treatment

- ▶ 1. Does not take a trouble – without therapy
- ▶ 2. Takes a trouble sometimes - benzodiazepines intermittent
- ▶ 3. Takes a trouble most of the day – betablockers
 - ▶ - barbiturates
- ▶ 4. Serious disability – injections of BTX (botulinum toxin)
 - ▶ - DBS (very rare)



DYSTONIA

- ▶ Slow spasm causing abnormal postures
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Classification according to ETIOLOGY

- ▶ - Idiopathic
 - Familiar (DYT 1.....DYT 35)
DRD (dopareponsive Dystonia) – low doses of L-Dopa
 - Symptomatic (Wilson d., parkinson plus d. –CBD,PSP)
- ▶ - Drug induced (antiemetics!, antiparkinsonics,neuroleptics)

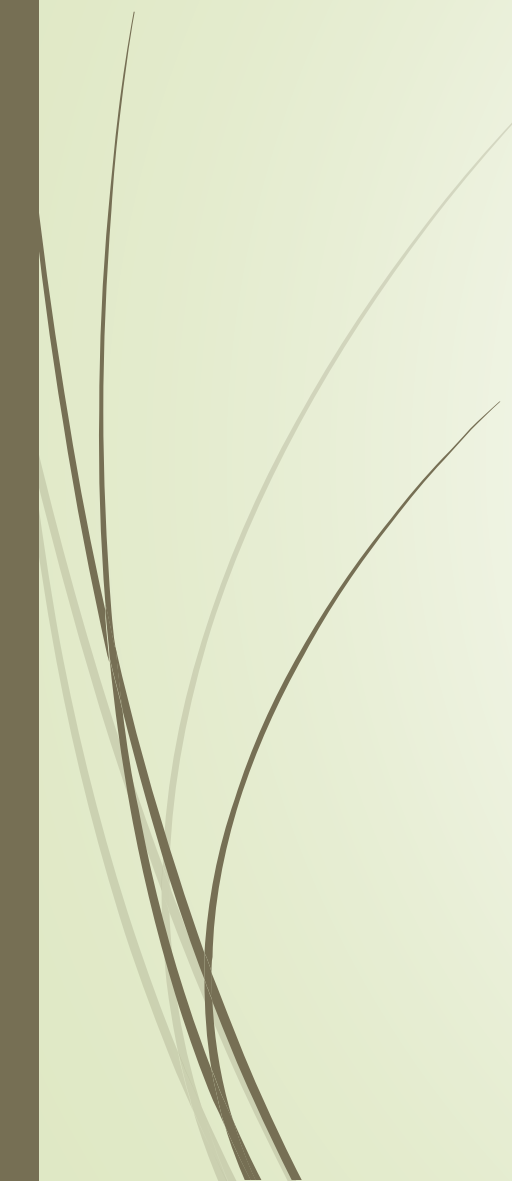


Classification according to LOKALIZATION

- ▶ FOKAL D.
- ▶ SEGMENTAL D.
- ▶ GENERALIZED D. (hereditary, childhood)



FOCAL Dystonia

- CERVICAL
 - - torticollis (most common)
 - - anterocollis, retrocollis, laterocollis
 - BLEPHAROSPASM
 - WRITER'S CRAMP
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Treatment

- ▶ 1. INJECTIONS OF BTX (focal D.)
- ▶ - chemical denervation, blockade of acetylcholintransfer
- ▶ - muscle weakness can be effective for about 3 months
- ▶ - 5% of patients develop antibodies


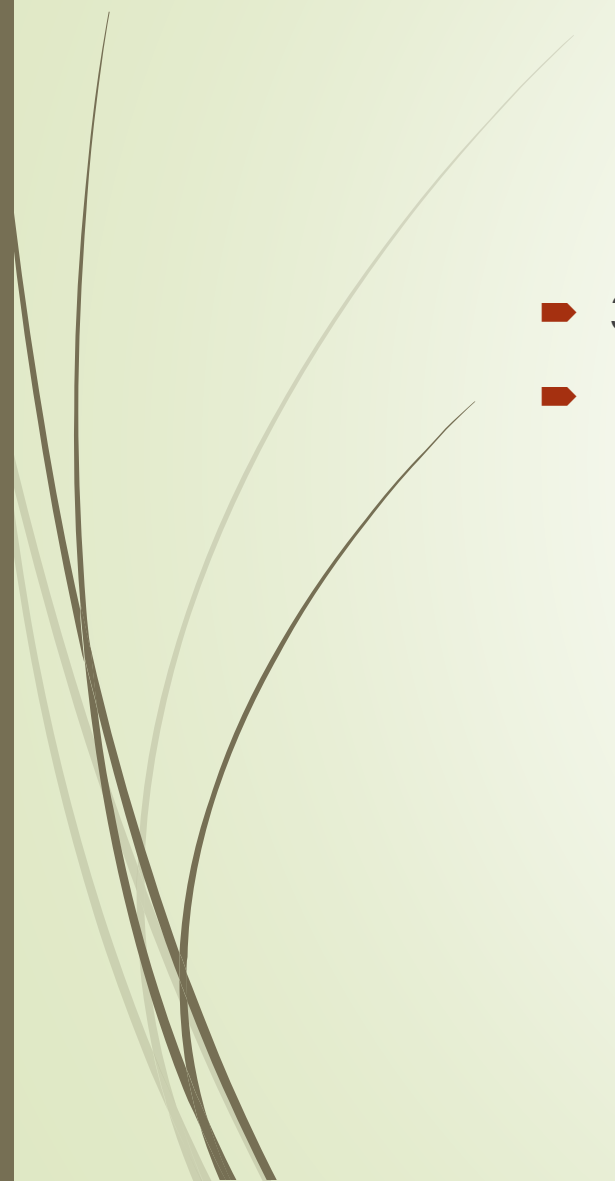


➤ 2. MEDICAMENT (pills)

➤ - Anticholinergics (Akineton)


➤ - GABA agonists (Baclofen)

➤ - benzodiazepines (Diazepam, Rivotril)

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- ▶ 3. SURGICAL (generalized D.)
 - ▶ - DBS (globus palidum bilateral)



CHOREA

- Chaotic
 - Nonstereotype
 - Irregular
- 



CLASSIFICATION

- A. Hereditary

- B. SECONDARY
- 1. Drug induced (antiparkinsonics, AED, neuroleptics, HAK, KS, opiates)
- 2. Metabolic (hepatal or uremic encefalopathy)
- 3. Endocrine (chorea gravidarum)
- 4. Immunologic (lupus erythematosus)
- 5. Other (senile orofacial f.e. due to new dental prosthesis)



HUNTINGTON DISEASE

- ▶ - prevalence 4-10 : 100 000
- ▶ - adult form (age of onset 35 -50)
- ▶ - hereditary, AD (children – 50% risk)
- ▶ - symptom : chorea + dementia + personality changes
- ▶ - 100% mortality (survival 10 -15 years)
- ▶ - no causal treatment possibility
- ▶



PATHOLOGY



- ▶ - faulty gen on the 4. chromosome and cause expansion of triplet CAG
- ▶ - less than 35 triplets : exclude HD
- ▶ - 40 and more triplets : confirm HD
- ▶ - result: production of pathologic protein Huntingtin

- ▶ Genetic testing (adult person in risk...Prague)



Clinical Symptoms

- ▶ - Dyskinesias (CHOREA f. to g. ... less dystonia)
- ▶ - Mental symptoms (depression, anxiety, aggression, ethanol abuse, criminality)
- ▶ - Dementia (present always in late stadium)



Neuroimaging




- ▶ Brain CT or MRI - atrophy of caput ncl caudati
- ▶ Brain PET MRI - hypometabolism of ncl caudati



➤ Obrázky.....






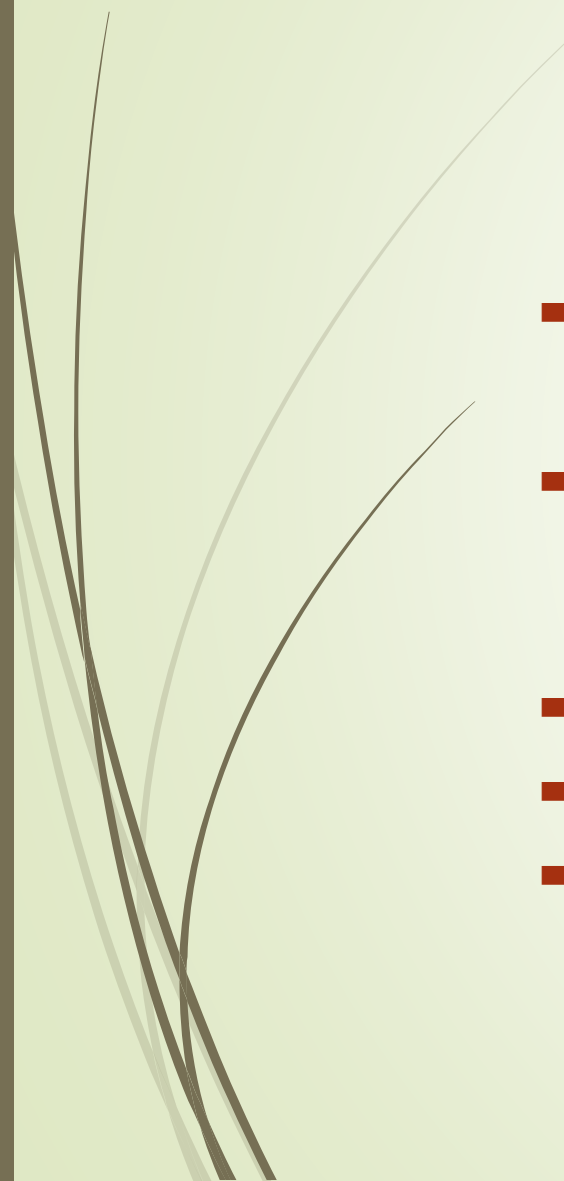
Treatment only symptomatic

- ▶ CHOREA - neuroleptics (Tiapridal, Haloperidol, Risperidone)
- ▶ DEPRESSION - SSRI
- ▶ PSYCHOSIS - neuroleptics
- ▶ DEMENTIA - no treatment
- ▶ Clinical trials (2019) gene therapy (target: inactivation of proinflammatory huntingtin protein)



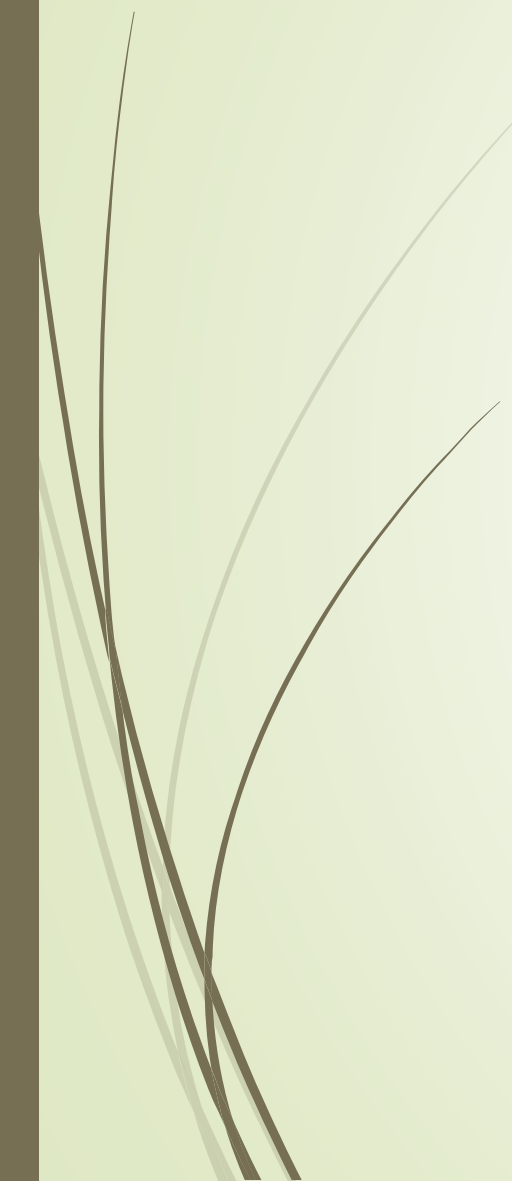
(HEMI)BALLISM

- Rapid
- Severe
- Unilateral
- Lokalized mostly on radical muscles of limb

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- ▶ Prevalence - 1 : 500 000 (rare)
 - ▶ Etiology - lesion of ncl. subthalamicus Luysi mostly according to lakunar infarkt
 - ▶ Treatment - neuroleptics
 - ▶ - benzodiazepines
 - ▶ - AED



TICS

- ▶ Sudden
 - ▶ Stereotypic
 - ▶ Movement or Vocalization
- 



CLASSIFICATION

- ▶ MOTORIC T.
 - ▶ - simple brief movement (head jerks, eye blinking)
 - ▶ - complex coordinated movement (grimace)
- ▶ VOCAL T.
 - ▶ - simple (coughing)
 - ▶ - complex (words, sentences)



GILLES De La TOURETTE SYNDROME

- ▶ - simple brief jerks to complex pattern of rapid coordinated movements or vocalizations
- ▶ - onset in childhood
- ▶ - begin in the face and neck (97%)
- ▶ - relapses and remissions are common
- ▶ - association with compulsive and hyperactive behavior
- ▶ - prevalence 50 : 100 000 (boys)
- ▶ - hereditary possibility




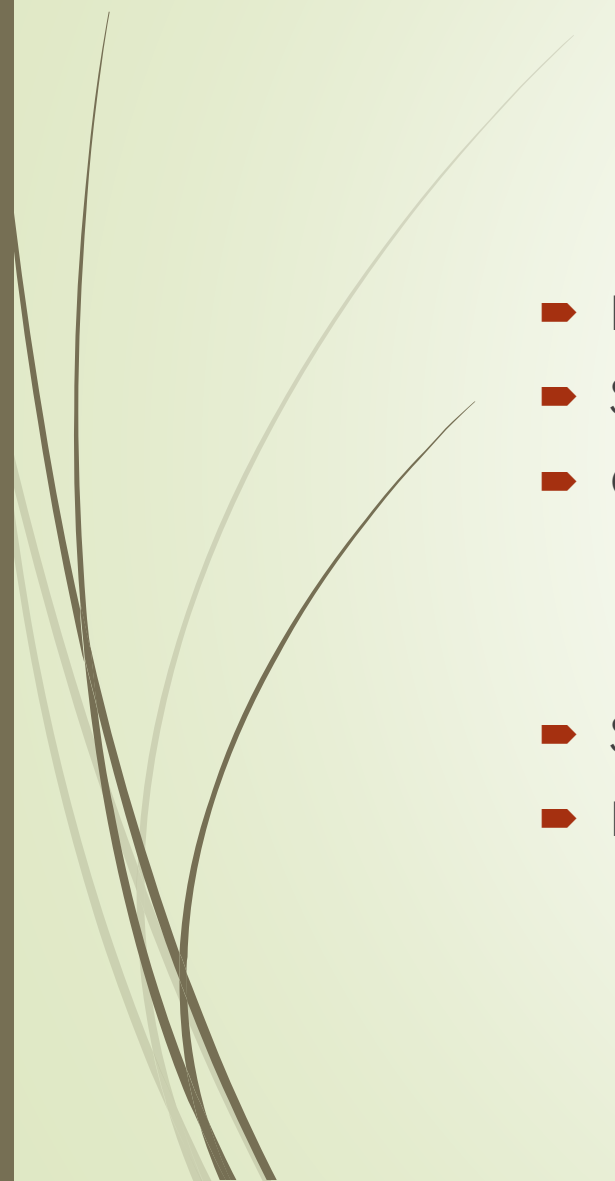
Treatment

- ▶ - Psychotherapy
- ▶ - Severe tics : neuroleptics
- ▶ benzodiazepines
- ▶ injection of BTX
- ▶ - Severe OCD: SSRI



MYOCLONUS

- ▶ Brief muscle jerks
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- ▶ Focal
 - ▶ Segmental
 - ▶ Generalized

- ▶ Spontaneous
- ▶ Reflex



CLASSIFICATION

- ▶ 1. CORTICAL
 - ▶ - arising from the cerebral cortex
 - ▶ - epileptic or nonepileptic
- ▶ 2. SUBCORTICAL
 - ▶ - arising from the brainstem
 - ▶ - only nonepileptic
- ▶ 3. SPINAL
 - ▶ - arising from spinal cord
 - ▶ - only nonepileptic



According to EEG + EMG results we can differentiate between epileptic or nonepileptic M.

- ▶ A. EPILEPTIC – progressive myoclonic epilepsy

- ▶ B. NONEPILEPTIC
 - ▶ 1. Physiological (singultus)
 - ▶ 2. Posthypoxic (KPR)
 - ▶ 3. Metabolic (hepatal or uremic encephalopathy)
 - ▶ 4. Infectional (JCD)
 - ▶ 5. *Drug induced (opiats, SSRI, Lithium, Gabapentin, anticholinergics)*



TREATMENT

- ▶ AED – valproic acid
- ▶ Benzodiazepines - clonazepam