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Convulsions, epilepsy

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Learning objectives

- Student knows the types of convulsions and epileptic seizures.

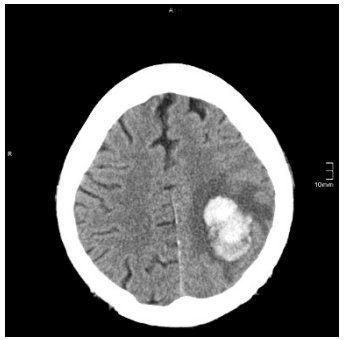
- Student knows how to provide safety for the patient during epileptic seizure and how to proceed after the end of the seizure.

Convulsions

- Involuntary skeletal muscle contraction
- Bending of body, body stiffening
- Twitching of limbs, jerking movements
- Flutter of the eyes, blank staring
- The patient doesn’t communicate, possible loss of consciousness
- Irregular breathing, respiratory arrest
- Foaming at the mouth
- Biting of tongue, lips, cheeks
- Loss of muscle tone of sphincters – urination, fecal incontinence

Etiology of convulsions

- Sudden rise of body temperature (e.g. febrile convulsions in children)
- Neurological disorders - epilepsy
- Metabolic disorders (e.g. hypoglycemia)
- Intracranial expansive processes, stroke, intracranial bleeding
- Eclampsia
- Intoxication
- Infectious diseases



Epilepsy

- Neurological disorders characterized by recurrent epileptic seizures
- Disorder of electrical activity of the brain - disturbed balance between inhibition (GABA) and excitation (glutamate) neurotransmissions

causes: often unknown, brain injury, genetic, metabolic disorder etc.

Epilepsy - types of seizures

Partial (focal)

- Initiation in focal part of the brain, symptoms corresponds with the location of epileptogenic region
- Some patients develops **“auras”** - “warnings”, seizure limited to particular area of the brain (a “rising” feeling in the stomach, a feeling of numbness or tingling, halutinations…)
- If seizure continues to spread, **partial complex seizure** develops - automatic unpurposeful movements (licking, chewing), incomprehensible speech
- After seizure possible anxiety, aggressiveness, amnesia

Epilepsy - types of seizures

Generalized seizures

- Epileptic activity of brain cortex or hempisphere
- Scream, fall, growling, salivation
- Violent muscle contractions of the limbs
- Quick, random spasms
- After seizure usually loss of consciousness
- **Absence seizures**
  - sudden lapses of consciousness, staring into space
  - typically in children

What endangers the patient?

- Injury caused by fall
- Injury caused by surrounding objects
- Airway obstruction
- Sudden cardiorespiratory arrest

First aid during the seizure

- Communicate with the patient (if conscious) as well as with the other persons present
- Lay the patient on the floor
- Put something under the patient's head, lose tight clothes around neck
- Move harmful or sharp objects
- Do not restrain convulsions, spasms or automatisms
- Wait for the end of seizure
- Measure the length of the seizure

First aid after the seizure

Patient with decreased level of consciousness

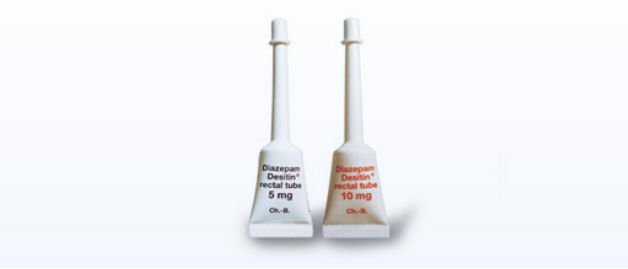
- Follow algorithm **SSS ABC!**
- Open and clear the mouth, open the airway
- Turn the patient on the side
- Wait for return of consciousness

Patient is conscious

- In case of post-paroxysmal disorientation calm the patient down
- Check if there are injuries (head, tongue, spine)
- Obtain anamnesis

First aid - medicaments

- In children (with anamnesis of febrile convulsions, epilepsy)
  - Diazepam 0,5 mg/kg body weight **orally** (tablets)
  - Diazepam rectal solution, **rectal** suppository
    - 5 mg per rectum in children up to 15 kg
    - 10 mg per rectum in children above 15 kg



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First aid - what NOT to do!

- Do not use physical power!
- Do not restrain movement (convulsions and automatisms)
- Do not try to pull out patient’s tongue
- Do not put any objects in patient’s mouth
- Do not use jaw maneuvers during the seizure
- Do not give water or food to the patient

When to call ambulance?

- Repeated seizures (cumulation of seizures)
- Status epilepticus
- First seizure
- Injury of the patient
- Diabetic
- Pregnant woman
- Patient does not return consciousness after 5-10 minutes
- Patient does not return to his/her usual state, disorientation persists

When NOT to call ambulance?

- Patient on medication with known epilepsy
- Return of consciousness
- Disorientation does not persist
- There is no injury

Learning outcomes

- Student is able to decide when it is necessary to call an ambulance.
- Student knows how to ensure patient safety during an epileptic seizure.
- Student is able to describe how to proceed after the seizure.

Resources

Czech league against epilepsy: http://www.clpe.cz/Epistandardy_2017_web.pdf

Czech Red Cross: https://www.cervenykriz.eu/cz/standardy/standardy-prvni-pomoci-2017.pdf

https://www.epilepsy.com/sites/core/files/atoms/files/SFA%20Flier_HQ_8.5x11_PDF.pdf

https://reference.medscape.com

https://www.youtube.com/watch?v=jJWfHHqfSbk

Resources - pictures

https://radiopaedia.org/cases/early-and-late-subacute-intracerebral-haemorrhage-on-mri-and-ct

https://cz.depositphotos.com/88798832/stock-illustration-man-got-fever-high-temperature.html

https://www.desitin.cz/pro-pacientyvpois/diazepam-desitinr-rectal-tube/

https://cs.iliveok.com/health/cipky-z-hemoroidu_112579i15828.html

https://www.kissclipart.com/ambulance-png-clipart-ambulance-clip-art-tsst4z/

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