



DROWNING

UMFPB Timisoara

FIRST AID


1st year, General medicine

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COURSE OBJECTIVES & LEARNING OUTCOMES

At the end of the course the students must:

- 1 - define the notion of drowning**
 - 2 - recognize the situations in which and the signs that a person is drowning**
 - 3 - to know the mechanism of drowning and the outcome of it**
 - 4 - to know the correct attitude for rescue a drown victim**
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- Several white diagonal lines of varying lengths and thicknesses are positioned on the right side of the slide, extending from the middle towards the bottom right corner.

DEFINITION

Drowning is the process of experiencing respiratory impairment/failure caused by the entering of fluids at the level of respiratory airway, either by submersion or immersion in liquids.

Outcomes are classified as :

Death (asphyxiation),

Morbidity

No morbidity



BEWARE !

In most cases ,when children are drowning the bystanders (parents) do not even realise what is happening .

Drowning it is a nonviolent process, unspectacular, generally the victim is not splashing or shouting for help.

Children, males and individuals that leaves in the proximity to deep waters are most at risk of drowning.



ETHIOLOGY

Drowning may be a primary event or may be secondary to events such as the following:

Seizures

Head or spine trauma

Cardiac arrhythmias

Hypothermia

Alcohol and drug ingestion

Syncope

Apnoea

Hyperventilation

Mental impairments

Suicide

Hypoglycemia



INSTINCTIVE DROWNING RESPONSE

This is not consciously mediated

1. Head low in the water, mouth at water level or under.
2. Head tilted back with mouth open
3. Eyes glassy and empty, unable to focus
4. Trying to swim in a particular direction but not making headway
5. Hyperventilating or gasping
6. Trying to roll over on the back to float
7. The hair is covering the face without making an effort to put it away
8. Uncontrollable movement of arms and legs, rarely out of the water



Mechanism and consequences



- ▶ involuntary period of laryngospasm triggered by the presence of liquid in the oropharynx or larynx blocking the airways (dry drowning-10% very small quantity of liquid)
- ▶ the victim is unable to breathe in air, causing oxygen depletion and carbon dioxide retention
- ▶ the oxygen tension in blood drops further, laryngospasm releases, and the victim gasps, hyperventilates, aspirating variable amounts of liquid (wet drowning)
- ▶ hypoxemia having as result the acidotic change in acid-base balance, the person may develop myocardial dysfunction and electrical instability, cardiac arrest, and CNS ischemia

► Consequences

Hypoxemia leads to neural lesions after 3-4 minutes and the start of irreversible neural death after 6 minutes



The exception is the drowning produce in cold environment when due to dropping of body temperature, the metabolisms is reduced and the cellular oxygen needs decreased, survival can occur without neurological impairment even after 30 minutes

Secondary drowning- late by pulmonary oedema caused by the irritation of pulmonary alveolus

IMMEDIATE ATTITUDE IN CASE OF DROWNING

Don't be heroes !!!



- **It is extremely dangerous** to rescue a drowning victim if there are **no points of support** for holding or stepping on
- Rescue the victim by extending an arm, a long pole, a rope or similar items if the victim is near the water edge making sure that you have a firm and stable position
- The victims which are far away from shore – throw any items which can assure floating and safe recovery to the shore or to a boat



IMMEDIATE ATTITUDE IN CASE OF DROWNING

-if spinal lesions are suspected , early immobilization is attempted utilizing a rigid support

-If the victim is in respiratory arrest , immediately start CPR (in the water) but only if the rescue person is a professionally trained in performing this maneuvers



IMMEDIATE ATTITUDE IN CASE OF DROWNING

On land:

- If the victim is **breathing and has a pulse**- frequent assessments, encourage coughing, or in case of unconsciousness place the victim in safe position and call 112
- **unconsciousness, no breathing, pulse present**
 - **rescue breaths (20/minute)**
- **Cardiorespiratory arrest**
 - **CPR (30:2 or 15:2)**
- **Even if we have a successful CPR and the victim regains consciousness– SEND THE VICTIM TO A HOSPITAL (secondary drowning, chest infections etc.)**



IMMEDIATE ATTITUDE IN CASE OF DROWNING

-Hypothermia by immersion in cold waters can lead to shock followed by inefficient swimming ,cardiac arrhythmias and loss of consciousness .

We have to take in consideration the treatment of hypothermia in case of exposure to a cold environment



IN SUMMARY

- 1 – DROWNING is the obstruction of respiratory airways by liquids
 - 2 – DROWNING is in general nonviolent and the victims are not shouting for help
 - 3 – It is extremely dangerous to rescue a victim in liquid environment
 - 4 – Hypothermia must be taken in consideration and treated
 - 5 - CPR is a must know
 - 6 - All the drowning victims must be taken to a hospital
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