

Instructions for the "practicum seminar" in week 10 of the LS

Acid-base balance

Prerequisites and requirements for the entrance quiz:

Calculations of pH of strong and weak acids and bases and pH of buffers, basic body buffers and their composition

Name and know the principle of basic ABR disorders

Plot and bring home the listed entry parameters for each patient on the protocol sheet

Attention classes are held in lecture room 1.06 U nemocnice 4.

Acidosis is a process leading to a drop in pH. Alkalosis, on the other hand, is a process leading to a rise in pH.

Respiratory disturbances are signalled by a change in $p\text{CO}_2$ (respiratory disturbance) - hyper or hypocapnia, metabolic disturbances by a change in BE (base Excess) ($[\text{HCO}_3^-]$).

There are four basic ABR disorders:

Base excess represents the concentration of bases determined by titration of the fluid under investigation to make the pH equal to 7.40 at a $p\text{CO}_2$ of 5.33 kPa and a temperature 37°C in oxygenated blood.

There are four basic ABR disorders:

- 1) **Respiratory acidosis:** a drop in blood pH whose primary cause is a rise in $p\text{CO}_2$
- 2) **Respiratory alkalosis:** a rise in blood pH, the primary cause of which is a fall in $p\text{CO}_2$
- 3) **Metabolic acidosis:** a decrease in blood pH, the primary cause of which is a decrease in BE ($[\text{HCO}_3^-]$)
- 4) **Metabolic alkalosis:** a rise in blood pH, the primary cause of which is a rise in BE ($[\text{HCO}_3^-]$)

