

Oxygen parameters

For the examination of oxygen parameters, either arterial blood or mixed venous blood from the pulmonary artery is used (the latter is usually unavailable, so blood is taken from the superior vena cava).

Partial pressure of oxygen (pO_2)

- 9.9–14.4 kPa (approx. 100 torr) – valid for **arterial blood** (lower limit – old people, upper limit – young people);
- normal or higher values do not mean that there is enough oxygen in the blood (this also depends on Hb);
- blood in *a. pulmonalis* – 4.5–7.1 kPa.
- **venous blood** – about 5.3 kPa (40 torr);
- Swan-Ganz catheter - into the lung - few patients.

Hb oxygen saturation (sO_2)

Can be obtained in several ways:

- calculate from the dissociation curve Hb, when we know pO_2 , for the dissociation curve we need to know pH, pCO_2 , temperature and value of 2,3-bisphosphoglycerate;
 - it is reliable if some pathological fraction of Hb is not increased (methHb, ...);
- *pulse oximetry* – it is burdened with the same possible error, we illuminate the capillary bed of the finger, the advantage is continuous measurement, it is distorted by pigmentation, thick skin, hypothermia and others;
- *oximetry* – we measure with an oximeter, it measures oxyHb directly, usually built directly into acid-base analyzers;
 - the method uses optical fibers - a special catheter into the vein, especially in shock states.

sO_2 art. – 0.94–0.99

sO_2 veins – 0.65–0.80

- Values from the vena cava superior are higher than from the a. pulmonalis (more oxygen flows from the upper part of the body, ...).

pH of the gastric mucosa

- The development of general hypoxia is preceded by the development of hypoxia in some organs.

Links

References

- SCHNEIDERKA, Petr. *Kapitoly z klinické biochemie*. 2. edition. Praha : Karolinum, 2004. ISBN 80-246-0678-X.