Apnea (neonate)

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Apnea is a pause in breathing that lasts **20 seconds or longer** with **a decrease of oxygen saturation** (cyanosis) and also bradycardia (heart rate < 100/min.). It often occurs in preterm neonates, as i*diopatic apnea* caused by the immaturity of the breathing center.[1]

The types of apnea according to the etiopathogenesis

Obstructive

The air flow is obstructed but the respiratory movements are still preserved. In most cases, the cause is pharyngeal, and provoking factors include, besides other things a prone position, i.e. laying down on abdomen with head flexion. Other causes are: mucous congestion of the airways, stenosis, atresia and compression of the airways.

Central (most common)

There is no air flow or respiratory movement. Causes: immaturity, medications taken by the mother, sepsis, congenital heart defects, CNS causes – birth defects and congenital anomalies, trauma, haemorrhage, inflammation, spasms, hypothermia/hyperthermia, shock, asphyxia, anemia. Metabolic causes: acidosis, hypoglycemia, hypocalcemia, hyponatremia, inborn errors of metabolism.

Mixed

They often begin as peripheral with subsequent central respiratory failure. They are frequently accompanied by bradycardia.

Reflexive

The cause is: Gastroesophageal reflux disease (GERD) mediated by the vagus nerve.

Idiopathic

The cessation of breathing longer than 15–20s without any apparent pathology. Frequently seen in preterm neonates who do not have completely matured axodendritic connections of respiratory neurons in the brainstem - they react to hypoxia by respiratory pause instead of hyperventilation. Neonates under the 1000 g of birth weight are at higher risk. The incidences lower decrease after the 36th week of postconceptual age.

*Note: every **apnea** in full-term neonate should be considered pathological.*

Symptomatic

Caused by intracranial haemorrhage, respiratory distress syndrome, sepsis, aspiration, drug abuse in mother, airway obstruction, pneumonia, meningitis.[1]

Clinical presentation obraz

Respiratory pauses, cyanosis, hypotonia, bradycardia.

Diagnosis

„Baby sense monitor“, monitoring of vital parameters, pulse oximetry, (we should exclude pauses lasting more than 10 seconds, which accompanies feeding or movements of the newborn).

Therapy

- General precautions:
  - thermoneutral environment (cave! hypothermia),
  - the right head position (cave! anteflexion),
  - orogastric tube preferred over the nasogastric,
- tactile stimulation,
- treatment of primary cause,[2].

Links

Related articles

- Dyspnoe

References

1. MUNTAU, Ania Carolina. *Pediatrie.* 4. vydání. Praha : Grada, 2009. s. 14. ISBN 978-80-247-2525-3.
2. ↑ Skočit nahoru k:a b c HAVRÁNEK, Jiří: *Respirace*.

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1.
2. **Cite error: Invalid <ref> tag; no text was provided for refs named `Havranek`**