

Neonatal pneumopathy

Neonatal pneumopathy (lung disease) includes:

- respiratory distress syndrome (RDS - *respiratory distress syndrome*, IRDS - idiopathic RDS; hyaline membrane syndrome),
- barotrauma: pulmonary interstitial emphysema (PIE), pneumothorax (PNO), pneumomediastinum, pneumopericardium, pneumoperitoneum,
- persistent fetal circulation syndrome (PFC; persistent pulmonary hypertension of the newborn, PPHN),
- meconium aspiration syndrome (MAS) and other aspiration syndromes,
- congenital diaphragmatic hernia,
- neonatal pneumonia,
- pulmonary apoplexy,
- bronchopulmonary dysplasia (BPD; CLD - *chronic lung disease*).

Brief overview

Respiratory Distress Syndrome (RDS)

- **characteristic:** acute disease mainly affecting premature and NNPH, caused by surfactant deficiency
- **clinical picture:** tachypnea, alar flexion, retraction of jugular and subcostals, grunting, cyanosis
- **diagnosis:** clinical picture, X-ray - reticulogranular pattern to gradual homogeneous shadowing ("white lung" picture)
- **therapy:** provision of ventilation (oxygen therapy, distension therapy, UPV, administration of surfactant), circulation and parenteral nutrition
- **prevention:** prevention of prematurity, preventive prenatal administration of steroids to the mother (so-called "induction of lung maturity")

 For more information see *Respiratory Distress Syndrome (Pediatrics)*.

Pneumothorax (PNO)

- **characteristic:** the presence of gas in the pleural cavity
- **clinical picture:** sudden dyspnea, hypoxia, hypercapnia, cyanosis, inaudible respiration on the affected side, sometimes bulging hemithorax, circulatory failure
- **diagnosis:** clinical picture, auscultation, translumination, X-ray
- **therapy:** chest puncture, chest drainage, ensuring ventilation and oxygenation, ensuring circulation

 For more information see *Pneumothorax (Neonatology)*.

Syndrome of persistent fetal circulation (PFC, PPHN)

- **characteristic:** persistence of right-to-left shunts in the circulation due to postnatal hypoxia and acidosis; normal heart structure; accompanies MAS, PNO, RDS, diaphragmatic hernia, sepsis, hypoxia
- **clinical picture:** severe hypoxia, circulatory failure, picture reminiscent of cyanotic congenital heart disease
- **diagnosis:** echocardiography
- **therapy:** treatment of primary cause, UPV, NO, ECMO

Meconium aspiration syndrome (MAS)

- **characteristic:** inhalation of meconium before, during or just after birth
- **clinical picture:** presence of meconium in amniotic fluid and oral cavity, signs of ventilation and circulatory failure, meconium-colored skin
- **diagnosis:** clinical picture, X-ray
- **therapy:** suctioning of the oral cavity and airways laryngoscopically and via ET cannula, UPV, treatment of circulatory failure, treatment of PFC

Neonatal pneumonia

Pulmonary apoplexy

- **characteristic:** hemorrhagic pulmonary edema - bleeding into the lungs
- **clinical picture:** the child's ventilation suddenly deteriorates - he is pale, dyspneic to apneic with bradycardia and cyanosis, pink-red secretion oozes from the oral cavity or endotracheal cannula
- **diagnosis:** typical clinical picture: respiratory deterioration accompanied by bleeding from the respiratory tract
- **therapy:** suction from the airways, optimization of ventilation and oxygen therapy, maintenance of basic vital functions, treatment of the primary cause and supportive treatment.

Congenital diaphragmatic hernia

- **characteristic:** congenital defect of the diaphragm with displacement of the abdominal organs into the chest; most often left-sided (Bochdale's)
- **clinical picture':** according to the degree of the diaphragm defect - rapidly progressing shortness of breath and circulatory failure, inaudible breathing on the side of the defect, sunken abdomen
- **diagnosis:** clinical picture, hearing findings, X-ray
- **therapy':** intubation and UPV (as low as possible inspiratory pressures and peep), nasogastric tube, PFC treatment

Bronchopulmonary dysplasia (BPD)

- **characteristic:** chronic lung involvement resulting from lung damage in neonatal age as a result of prolonged mechanical ventilation and high concentration of oxygen in inhaled air; caused by abnormal repair of lung tissue
- **diagnosis:** oxygen dependence even after 28 days after birth, X-ray
- **therapy':** oxygen therapy, UPV, proper nutrition, diuretics, steroids, theophylline, bronchodilation, treatment of infection, nursing care

Links

Related Articles

- Congenital developmental defects of the respiratory system

External links

- V. Vobruba: Neonatal pneumopathy (<http://www.vfn.cz/priloha/5002c55b84e8d/novorozenecke-pneumopatie.pdf>)
- P. Rejtar: Newborn lungs on X-ray (https://www.suro.cz/cz/lekarske/udalosti/Rejtar_tisk.pdf)

References

- V. Vobruba: Neonatal pneumopathy (<http://www.vfn.cz/pracoviste/kliniky-a-oddeleni/klinika-detskeho-a-dorostoveho-lekarstvi/>)

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