

# Respiratory monitoring and management in neonatal and paediatric intensive care

## Neonatology and paediatric intensive care

### PA-69146 - Lung biopsies in infants and children in critical care situation

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**Introduction:** Lung biopsy is the gold standard for the diagnosis of diffuse lung diseases. Its indication has to be balanced with its invasiveness. The present study aims at identifying the best indications of lung biopsies in pediatric patients hospitalized in intensive care unit (ICU).

**Methods:** Children hospitalized in ICU who underwent a lung biopsy were included between 1995 and 2022. Biopsies performed in the operating room, post-mortem biopsies and autopsies were excluded.

**Results:** Thirty-one patients were included at a median age of 18 days (2 days to 10.8 years); 21 (67.7%) were newborns. All had an invasive ventilation, 26 (89.7%) had a pulmonary hypertension and 22 (70.9%) were under extra corporeal membrane oxygenation (ECMO). The lung biopsy allowed a diagnosis in 81% of the patients, diagnostic reliability decreasing with age (95%, 71% and 0% in newborns, 1 month to 2 years and > 2 years-old respectively). Diffuse developmental disorders of the lung represented 15 (48%) patients, mostly alveolar capillary dysplasia, followed by surfactant disorders in 5 (16%) patients. Complications occurred in 9 (39.1%) patients including 8 under ECMO with massive hemorrhages in 7 cases. A duration of ECMO = 10 days and an age > 2 years-old seemed to be of higher risk of complications.

**Conclusion:** Lung biopsy is a reliable exploration in neonates in critical situation in whom a diffuse developmental disorder of the lung is suspected. In older children, the risk of the procedure increases while its diagnostic reliability decreases. Very few therapeutic modifications followed the lung biopsy; however it allowed withdrawing ECMO and other high levels of life-sustaining supports in fatal forms of congenital diseases.

**Keywords:** Critically ill patients, Children, Congenital lesion/malformation