ADVANTAGES OF LUNG ULTRASOUND IN MANAGMENT OF CRITICALLY ILL CHILDREN

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Background: Lung ultrasound (LUS) is a new diagnostic tool for pleuropulmonary diseases in the critically ill patients. BLUE protocol is a tool for rapid assesment of present lung status with focusing on acute pathologies.

Aim: To validate the possibility of use the BLUE protocol in children. To investigate lung pathologies in critically ill children with respiratory insuficiency by BLUE protocol, compare it with traditional chest X-ray or CT.

Methods: Study group - 15 children [mean age 10,1 years, mean weight 39 kg, 9 boys] with respiratory insuficiency examined by BLUE protocol and X-ray/CT. Control group – 30 healthy children [mean age 11 years, mean weight 42 kg, 18 boys] examined to confirm effectivity of BLUE protocol. In both groups the time of examination was measured. The results were statistically analysed.

Results: In study group the most common LUS finding was pneumonia (6 patients), atelectasis (3), small pleural effusions (2), lung oedema (2). Comparing LUS with X-ray- 6 patients completely correlate, 5 patients partially correlate and 4 patients completely uncorrelate. CT was performed in 5 children, completely correlate with LUS. The mean time for examination was 3,5 minutes compare with X-ray and CT, 20 and 45 minutes respectively. In all healthy children only physiologic findings (normal profile) were shown with mean time 3 minutes.

Conclusions: BLUE protocol is a simple and reliable imaging tool, not inferior to chest X-ray - specificity (90%) and sensitivity (90%), and can provide accurate information on lung status in critically ill patients with acute respiratory insuficiency.