BRONCHOALVEOLAR INTERLEUKIN-1 BETA: A MARKER OF BACTERIAL BURDEN IN CRITICALLY ILL CHILDREN WITH NOSOCOMIAL PNEUMONIA

D. Dmytriiev, O. Katilov, K. Dmytriieva

Vinnitsa National Medical University, Vinnitsa, Ukraine

Objective: To assess the relationship between concentrations of bronchoalveolar cytokines and bacterial burden in critically ill children with a presumptive diagnosis of nosocomial pneumonia.

Patients: According to the time course of nosocomial pneumonia at the time of study with bronchoalveolar lavage, 62 critically ill children with nosocomial pneumonia

Interventions: According to the time course of ventilator-associated pneumonia at the time of study with bronchoalveolar lavage, 62 children were divided into two subgroups: referral (n=32), and treated (n=30) nosocomial pneumonia. Bronchoalveolar lavage was performed in the most abnormal area on chest radiograph by fiberoptic bronchoscope. The concentrations of bronchoalveolar lavage cytokines.

Measurement and main results: 34 patients had a positive bacterial culture (bronchoalveolar lavage $\geq$ 10 colony-forming units/mL), and made up 82% of pathogens recovered at high concentrations. The concentrations of bronchoalveolar lavage interleukin-1 beta were 204.2 ± 15.7 and 38.2 ± 12.6 pg/mL (mean $\pm$ se) in the children with positive and negative bacterial culture, respectively ($p < .001$). Bronchoalveolar lavage interleukin-1 beta was significantly higher in the children with a high bacterial burden ($p < 0.001$), with mixed bacterial infection ($p < 0.001$), and with nosocomial pneumonia ($p < 0.001$), compared with values in patients without these features.

Conclusions: Since the concentration of bronchoalveolar lavage interleukin-1 beta was correlated with bacterial burden in the alveoli, it may be a marker for progressive and ongoing inflammation in critically ill children.