

THERAPEUTIC POSSIBILITIES IN CHILDREN'S ARDS: A REPORT OF TWO CASES

S. Nosal¹, P. Durdik¹, A. Luptakova¹, M. Sutovska², Z. Havlicekova¹, and P. Banovcin¹

¹Pediatric Clinic, and ²Department of Pharmacology, Jessenius Faculty of Medicine, Comenius University, Martin, Slovakia; slavonosal@yahoo.com

Background: Disorders of respiratory system are frequent in childhood, followed by progressive or acute respiratory failure in many cases. Furthermore, many severe non-respiratory diseases with acute course could seriously influence the respiratory functions of children resulting in acute lung injury (ALI) and moreover to the acute respiratory distress syndrome (ARDS). Changes in the surfactant system, e.g., inhibition of formation or structural damages, were followed and described during progression of ALI/ARDS, which requires a prompt therapy. Despite the recent knowledge about the pathophysiology and new therapeutic approaches, mortality of ARDS remains still high (30-50%). The latest studies report on positive effects of exogenous surfactant therapy, represented by a decline of mortality, improvement of oxygenation, decreased requirement of aggressive mechanical ventilation and a shortened time of artificial lung ventilation. Therefore, application of exogenous surfactant is frequently recommended for ARDS patients. **Methods and results:** The authors present their own experience with administration of exogenous porcine surfactant (Curosurf) in therapy of children with ARDS in two cases. Diluted surfactant was administered through endotracheal canula with a flexible bronchoscope directly to the both main bronchi. The first patient was 14 months old boy with retropharyngeal abscess and progression of septic shock, ARDS, and multi organs dysfunction syndrome (MODS). His clinical course did not show signs of improvement, despite a complex therapy. Therefore, we decided to apply the exogenous surfactant. We noticed a very prompt regression of ARDS symptoms and stabilization of patient's clinical course after administration of two single doses. A second patient was 17 years old boy with ARDS due to a near-drowning in a lake. Similarly, two single doses of exogenous surfactant were applied to him, which resulted in a reduction in signs of ARDS in a relatively short time. **Conclusion:** Exogenous surfactant seems to be of benefit in children with ARDS. Since the uniform pediatric guidelines regarding the application and dosing of surfactant have not yet been published, indications, dosing regimen, and route of administration remain to be explored.

These studies were supported by Grant of Ministry of Health No. SR 2006/35-UK-04.