**CONGENITAL CENTRAL HYPOVENTILATION SYNDROME (CCHS) ASSOCIATED WITH HIRSCHSPRUNG DISEASE IN CROATIA**

Irena Senečić-Čala1, Lana Omerza1, Boris Filipović-Grčić2, Margareta Dujšin1,

Duška Tješić-Drinković1, Milivoj Novak3, Dalibor Šarić4, Mario Ćuk5, Jurica Vuković1

Department of Gastroenterology, Hepatology and Nutrition1, Department of Neonatal Intensive Care2, Department of Pediatric Intensive Care3, Department of Cardiology4

Department of Inherited Metabolic Diseases5

University of Zagreb School of Medicine, University Hospital Centre Zagreb, Department of Pediatrics, Zagreb, CROATIA

Two cases of CCHS in Croatia, both associated with Hirschsprung disease, with different clinical course and outcome, are presented.

*Case 1.* Girl, born in 1994. Since birth, recurrent apneic crises in sleep and respiratory infections were noted. At age of 1,5 months, due to severe colonic aganglionosis, several abdominal operations were performed. Delayed postoperative recovery due to ventilation problems was recognized. At age of 4,5 years additional left colon resection was done and first ventilatory support via mask during sleep was initiated. Since than, her physical and psychomotoric development was in normal range. Genetic analysis confirmed CCHS (mutation of the stop codon, p.\*315Cysext\*41). At age of 16 years broad clinical workup revealed minimal neurologic, ophthalmologic and cognitive disturbances in normally developed girl, with normal cardiac and pulmonary findings, with no gastrointestinal problems. No signs of neural crest tumors were found. She is dependent on mask ventilation during sleep. She is well integrated in school and among peers.

*Case 2.* Boy, born in 2003. Since birth, mechanical ventilation was initiated due to severe asphyxia and lack of spontaneous breathing. Difficulties in stool evacuation were noted since first days of life. Long colonic and small bowel aganglionic segments were revealed and enterostomy was performed but he remained dependent on parenteral nutrition. 24-h ventilation was required and attempts to stop mechanical ventilation were unsuccessful. During late onset sepsis, he died of multiple organ failure at age of 4,5 months. Postmortal genetic analysis was positive for CCHS mutation (20/27 genotipe).

*Conclusion:* So far, these are the only recognized CCHS patients in Croatia. Even though CCHS, especially with Hirschsprung disease is a rare condition, it is to be expected more cases in a country of 4,2 million population. Increased awareness of this syndrome among physicians, mostly neonatologists, intensive care specialists and anesthesiologist, will certainly contribute to earlier recognition and adequate, in time treatment of CCHS patients.