IS-013  The role of ECMO for prenatally diagnosed congenital diaphragmatic hernia

Department of Pediatric Surgery, Graduate School of Medicine, Chiba University, Chiba, Japan
Department of Pediatric Surgery, Yachiyo Medical Center, Tokyo Women’s Medical University, Japan

Keita Terui, Hideo Yoshida, Katsunori Kouchi, Tomorou Hishiki, Takeshi Satou, Tetsuya Mitsunaga, Ayako Takenouchi, Naomi Ohnuma

Background: Prenatally diagnosed congenital diaphragmatic hernia (CDH) has poor outcome. Extracorporeal Membrane Oxygenation (ECMO) is a potent equipment for lung rest, and is proved to be effective for neonatal lung diseases. However, it is still controversial whether ECMO improves the outcome of severe CDH. The object of this study is to reveal the role of ECMO for prenatally diagnosed CDH.

Method: Clinical courses of the cases of CDH in our hospital since 1987 were reviewed. ECMO was introduced and applied for severe CDH since 1997.

Results: In 45 cases of neonatal CDH, 18 patients were prenatally diagnosed. In these cases, survivors were found at a later week of gestation (28.2 vs 33.3 weeks, p < 0.05), were estimated larger lung volume using MRI (10.4 vs 20.2 ml, p < 0.05), and tended to have heavier birth-weights (2,307 vs 2,853 g, p < 0.1). In the prenatally diagnosed cases, ECMO was applied in 12 cases, and 5 died. The causes of death were hypoplastic lung (3), intracerebral hemorrhage during ECMO (1) and cardiac arrest at the age of 3 months (1). Although there was no significant parameter to predict the survival of ECMO-cases, survivors tended to be found at a later week of gestation (27.2 vs 32.7 weeks, p < 0.1).

Conclusion: To reduce the death rate of ECMO cases, it is crucial to exclude the cases with extremely hypoplastic lung. The large-scale clinical study is needed, to reveal the better indication of ECMO.