Background: Severity of prenatally diagnosed congenital diaphragmatic hernia (CDH) ranges widely. To provide appropriate treatments, it is important to predict the prognoses prenatally. The object of this study is to test prenatal factors.

Method: Clinical courses of the cases of prenatally diagnosed CDH since 1991 were reviewed. Reviewed factors are time of diagnosis (week of gestation), lung area to head circumference ratio (LHR), lung to thorax transverse area ratio, lung volume estimated by using fetal MRI.

Results: 21 cases of CDH were diagnosed prenatally and received treatments in our hospital. In these cases, extracorporeal membrane oxygenation (ECMO) was applied in 13 cases, and 16 cases survived. Survivors were diagnosed later week of gestation (32.6 vs 28.2 weeks, p<0.05), and tended to have higher LHR (1.747 vs 1.271, p<0.05) and large standardized total lung volume (48.4 vs 28.7 %, p<0.05). Survivors who underwent ECMO treatment tended to be diagnosed later week of gestation (32.1 vs 27.2 weeks, p<0.1), and have large non-hernial sided, non-standardized lung volume (18.8 vs 9.1 ml, p<0.05). In survivors who underwent ECMO, time of diagnosis correlated with oxygenation index at birth (Rs=−0.82, p<0.05), and standardized total lung volume correlated with duration of intubation (Rs=−0.78, p<0.05).

Conclusion: Time of prenatal diagnosis and lung volume estimated by using MRI are useful to predict severity of prenatally diagnosed CDH.