Utility of fetal diagnosis of congenital heart disease in the Japanese countryside

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Objectives: To evaluate the effectiveness of fetal diagnosis of congenital heart disease (CHD) in Japanese countryside which has a limited number of institutions in which pediatric cardiac surgery can be performed.

Methods: We retrospectively examined 202 neonates referred to our institution for cardiac surgery within 14 days after birth. Subjects were divided into groups A (n=44) and B (n=158), before and after the establishment of the fetal echocardiography outpatient clinic (FEOC) in our institution, respectively. We evaluated the fetal diagnosis rate, emergency hospitalization rate, in-hospital mortality, and cardiac operative risk evaluation score of each group.

Results: The fetal diagnosis rate of CHD was 20.5% in group A and 46.8% in group B. Group B had a significantly lower emergency hospitalization rate (22.7% vs 8.9%, p=0.018). There is no significant difference in in-hospital mortality between the groups (13.6% vs 13.9%), despite group B had a significantly higher cardiac operative risk evaluation score (1.03 ± 0.10 vs 1.43 ± 0.05, p=0.0004).

Conclusions: Fetal diagnosis rate of CHD had been increased after the establishment of FEOC. Fetal diagnosis of CHD is effective for decreasing the emergency hospitalization rate and in-hospital mortality of neonates who need high risk cardiac surgery.