Prognosis of severe congenital heart diseases: do we overestimate the impact of prenatal diagnosis?

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Introduction:
Congenital heart diseases (CHD) are the most common and serious among birth defects (neonatal incidence 0.8 %). Prenatal screening is both time-consuming and costly in terms of organization. It is subject to controversy because of unproven benefits on morbidity and mortality associated with a significant impact on the continuation of the pregnancy, starting with the psychological aspect.

Method:
From 2003 to 2009 we retrospectively collected all pregnancies and children aged less than 1 with a diagnosis of CHD in our tertiary center database. Our study population was then limited to serious or complex CHD: lethal cases, leading to medical termination of pregnancy (MTP), and CHD requiring surgery, interventional catheterization or hospitalization during the first year of life. Primary endpoint was 1- year mortality among alive neonates.

Results: 322 severe CHD were included. 62.1% had a prenatal diagnosis with an excellent screening predictability of the heart defect severity. We observed significant differences between prenatal (group 1) and postnatal (group 2) CHD diagnoses comparing: type of heart disease (hypoplastic left heart syndrome 7.8% vs. 0.8%, p<0.05), frequency of ductal-dependent heart defect (34.3% vs. 28.7%, p<0.05) and association with chromosomal abnormality or malformation syndrome (31.1% vs. 28.8%, ns). We counted 96 MTP of 200 prenatal diagnosis (48%). Among the 224 alive neonates 15.2% died before the age of 1. Mortality at 1 year was not different between both groups (16.7% vs. 13.9%, p = 0.13). Major prognosis morbidity variables were not significantly different in both groups (medical treatment, duration of hospitalization, neurological, respiratory, or infectious complications).

Conclusion: like in many tertiary care CHD centers, we have strongly promoted fetal diagnosis over the 2 past decades throughout southern France. In our center prenatal diagnosis of severe CHD has an impact on the decision of MTP but not on prognosis in terms of 1-year mortality and morbidity. However, the overall severity of the prenatal diagnosed group is higher than the postnatal one, which moderates this conclusion. We recommend prospective multicenter studies with assessment of neurological prognosis and quality of life of patients. These studies will be facilitated by the use of standardized CHD registries.