Outcomes of transposition of great arteries in a country without possibility of surgical correction

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Background

Transposition of great arteries (TGA) is a congenital heart disease with very good surgical result in developed countries. The situation is very different in developing countries such as Tunisia. In fact, neonatal cardiac surgery has poor outcome and especially arterial switch surgery which is not available. Management of babies with TGA is a real challenge for physicians and very expensive for our government. The aim of this study was to assess the outcomes of TGA in Tunisia according to these difficulties.

Methods:

TGA patients, who were followed at the Hédi Chaker University Hospital in Sfax from January 2002 to December 2014, were retrospectively evaluated for patient characteristics, clinical manifestation, preoperative management, intraoperative findings, postoperative progress and follow-up status.

Results:

Sixty-one patients were included with a sex ratio of 2.39 (43 boys and 18 girls). Of all cases, only one was prenatally diagnosed. The mean age at presentation was 24 (±12.6) days and 82% of TGA were discovered in neonates. The most common symptoms were cyanosis (93.4%) and polypnea (36.1%).

Diagnosis was reached through Doppler echocardiography in all cases. Among our patients, 45 had simple TGA and 16 had TGA with a large ventricular septal defect (VSD).

Forty-five patients underwent Rashkind balloon atrial septostomy (73.7%) at a mean age of 30.7 (±16.9) days, and 19.7% received prostaglandin E1 infusion for an average of 5.5 (±1.1) days. Twenty-four preoperative deaths (39.3%) occurred on average 14.7 (±3.8) days after the diagnosis. All survivals had travelled abroad to be operated (France, Italy and Switzerland). Surgical correction was performed on 37 patients (mean age was 82.7 ±28.1 days, and mean time from diagnosis to surgery was 48.4 ±9.8 days. Repair was by one-stage arterial switch operation (ASO) (n=33), two-stage ASO (n=3) and Senning (n=1).

The government paid for these babies an average of 25 000 euros per baby.

Follow-up ranged from one to 126 months (mean 35.8 ±6.6 months) and it was free of reoperations and late deaths. The 36 survivors have no cardiovascular symptoms. They have normal left ventricular function, have no ischemic problems, and receive no medication.

Conclusions :

Mortality rate in TGA is high in spite of early diagnosis. Rashkind atrial septostomy and prostaglandin E1 allowed us to delay the surgical correction which is not yet available in Tunisia. This fact hampers us to reach developed countries’ results. Moreover, the cost of corrective surgery is heavy in a country where is mortality of some simple congenital heart defect is still high and unacceptable.