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### **Outcomes after surgery for Anomalous Origin of The Left Coronary Artery From The Pulmonary Artery In Infants.**

*Ellouali F., Robba M., Macé L., Metras D., Gran C., Kreitmann B., Fouilloux V., Ovaert C.  
Department of Paediatric Cardiology and Cardiac Surgery, Hôpital Timone Enfants, Assistance  
Publique – Hôpitaux de Marseille, Marseille, France*

#### **Introduction:**

Anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA) is one of the most common causes of myocardial ischemia in children. Excellent results are obtained by early surgical correction. We sought to determine outcome after surgical correction of ALCAPA.

#### **Methods:**

Data from 26 consecutive patients with ALCAPA who underwent coronary reimplantation between 1993 to 2013, were retrospectively analyzed. Surgery re-established a two-coronary system in all. Concomitant mitral valvuloplasty was performed in 2. Initial and follow-up echocardiographic data were analyzed in order to assess LV function and mitral regurgitation.

#### **Results:**

The median age at repair was 3.4 [2.2-16] months, median weight was 5.6 [4.2-7.9] kg. The median preoperative left ventricular ejection fraction (LVEF) was 28 % [20-40] and 67% of our patients (n=17) presented with LVEF < 35%. Young age at presentation was significantly correlated to impairment of LVEF (p = 0.001). Mitral insufficiency was moderate to severe in 10 patients (38.5%). Extracorporeal membrane oxygenation (ECMO) support systems were required in 2 cases (7.7%) before surgery and in 5 cases (19.2%) after correction. There was significant correlation between age and ECMO requirement (p=0.02). The median follow-up time was 63 [30-153] months. There were 3 postoperative death (at day 7, 60, 120 postoperatively, in children respectively aged 7 days, 3.5 and 4 months) with an overall mortality rate of 11.5%. Six months after the operation, LVEF had improved to a median of 55% [50.5-61]. Only 1 had persistent LV dysfunction that only normalized after 2 years. At latest follow up, the median ejection fraction was 65% [61.5-70]. Regression of mitral regurgitations (MRs) was noted in all patients. There were no early or late reinterventions on the reimplanted coronary arteries.

#### **Conclusions:**

ALCAPA is a severe disease and young age is significantly associated with a more severe presentation and more ECMO requirement. This may be explained by lesser development of coronary collateral circulation. After establishment of a two-coronary circulation both LVEF and MR tend to rapidly normalize over time in most patients.