Expression of Hypoxia-Inducible Factors and of Vascular Endothelial Growth Factor in Infants With Congenital Cardiac Defects

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Background: Hypoxia and mechanical stress could up-regulate mediators of angiogene-sis. We aimed to study the expression of VEGF and its receptor in the hearts of infants with congenital cardiac defects. This study was aimed to test this hypothesis.

Methods: Expression of VEGF mRNA was detected by RT-PCR in the right atrial and ventricular myocardium of infants with a cyanotic cardiac defect (tetralogy of Fallot (TOF) n=8), complete AVSD (n=6), and pulmonary valve stenosis (n=6). Expression of VEGF mRNA at the end of the operation and at discharge was compared. Expression of VEGF mRNA was measured by RT-PCR in myocardium from infants with hypoxic injury due to cardiovascular surgery.

Results: VEGF mRNA expression was higher in the right atrium and ventricle of patients with cyanotic defects compared to TOF. However, no correlation was found between VEGF expression and the degree of cyanosis.

Conclusion: These findings suggest that VEGF expression is up-regulated in hypoxic myocardium in infants with cyanotic cardiac defects but not in infants with TOF.