

flow-mediated dilation was lower in patients with coronary aneurysms due to KD as compared with normal controls ( $P < 0.05$ ). Arterial stiffness index was raised in KD group than in normal controls ( $P < 0.05$ ). There was no difference between the two groups in carotid intima-media thickness. The FMD was lower in KD patients with myocardial ischemia or ECG abnormalities than in patients without ( $P < 0.05$ ), while no difference was found in FMD between patients with giant aneurysms and those with medium aneurysms.

**Conclusions:** The endothelial function in patients with coronary aneurysms due to Kawasaki disease is damaged, especially in patients with giant coronary aneurysm and myocardial ischemia.

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**ECHOCARDIOGRAPHY AND ITS ROLE IN THE DIAGNOSIS AND PROGNOSIS OF CONGENITAL HEART DISEASE IN CHILDREN**

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The most important thing in the congenital heart disease evaluation is early diagnosis, because almost all CHD, even the most complicated ones, are now operable.

**Objective:** To determine the frequency and pattern of CHD in our country and to underline the role of early diagnosis in the outcome of patients with CHD.

**Material and methods:** Retrospective study of children with CHD, examined at hospitalized at University Children's Clinic, Prishtina, from 2000 - 2006. Age from 1 mo to 18 years. Except 2D color echocardiography, other non invasive techniques were also used for diagnosis: history, laboratory, ECG, chest X ray, pulse oximetry.

**Results:** The number of children with CHD was 1671, including the simplest to most complex CHD. According to cyanosis, there were 207 (12.4%) cyanotic patients, while 1464 (87.6%) have no cyanosis. The type of lesions were similar to those reported from other studies. The age when the diagnosis of CHD is performed was: Only 45% of children with CHD were diagnosed under the age of three years, the remaining 55% were diagnosed later, even at the age above ten years. It was probably the

reason for a high number of complications in children with CHD, such as : pulmonary hypertension (3.5%) , heart failure ( 10%) and death (5.5%).

**Conclusion:** Since echocardiography is sufficient for diagnosis of most CHD and has no adverse effects or hazards, echocardiography could be a routine in order to prevent late diagnosis of CHD and to escape complications.

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**ROLE OF MAGNESIUM IN PREVENTING POSTOPERATIVE ARRHYTHMIAS IN NEONATES AND INFANTS UNDERGOING THE ARTERIAL SWITCH OPERATION**

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**Objective:**

1. Magnesium levels in neonates and infants with Transposition of Great Arteries undergoing the Arterial Switch Operation.
2. Role of Magnesium supplementation in prevention of post operative arrhythmias in these infants.

**Material and methods:** After ethical clearance and written informed consent from the parents, Neonates and infants undergoing the Arterial Switch operation were randomly assigned to one of two groups. Group 1 ( n=25) was given intravenous Magnesium Sulphate 30 mg/kg in 5 ml Normal saline, immediately after cessation of cardiopulmonary bypass, while Group II ( n = 25) was given 5 ml of Normal saline as a placebo .Blood samples were taken after induction of anaesthesia, after stabilisation on cardiopulmonary bypass, during rewarming , and 4 hours after admission to the intensive care unit. The samples were analysed for arterial blood gases, and electrolytes including Na<sup>+</sup>, K<sup>+</sup>, ionised Ca<sup>++</sup>, ionised Mg<sup>++</sup> .Continuous ECG rhythm analysis and documentation of arrhythmias was performed for 24 hours in the intensive care.

**Results:** Both the groups were comparable with regard to demographic data. Mean preoperative ionised Mg<sup>++</sup> levels were below normal in both the groups, at 0.30 (±0.11)mmol/L in group I and 0.30(±0.8)mmol/L in group II. Serum ionised Mg<sup>++</sup> increased during rewarming period of cardiopulmonary bypass, in both groups.

In the intensive care, Mg<sup>++</sup> levels in group I, 0.74 ( $\pm 0.25$ ) mmol/L was greater than group II 0.40 ( $\pm 0.06$ ) mmol/L. Only 1 child out of 25 (4%) in Group I, had junctional tachycardia, while 5 out of 25 children in group II (20%) had junctional (4/25-16%) and 1 child had supraventricular tachycardia (4%).

**Conclusions:** Serum Mg<sup>++</sup> levels are low preoperatively in neonates/infants undergoing the arterial switch operation, Mg<sup>++</sup> supplementation helps in reducing postoperative arrhythmias in these children.

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**PATTERN OF LIFE THREATENING CONGENITAL HEART DISEASES - EXPERIENCE FROM 2 DISTRICT GENERAL HOSPITALS IN UK**

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**Aim:** To look at pattern, clinical presentation and initial management of life threatening congenital heart defects.

**Methods:** Retrospective audit focused on diagnosis and initial management of babies who presented with life threatening congenital heart diseases to 2 district general hospitals in UK from March 2007 to July 2009.

**Results:** 30 babies with life threatening congenital heart defects were identified. 30% were suspected antenatally. 80% presented within few hours after birth with cyanosis. 40% had murmurs. Diagnosis was confirmed in 29 by urgent echocardiogram performed by a paediatrician with expertise in cardiology and in 1 antenatally suspected case at cardiac centre. Most frequent defects were: Transposition of great arteries (including complex) 11, Hypoplastic left heart syndrome 3; Truncus Arteriosus 3; Pulmonary Atresia 2; Total Anomalous Pulmonary Venous Connection 2, Tetralogy of Fallot 2; and Congenitally Corrected TGA with other defects 2; Other defects (n=1) were Double outlet right ventricle with Ventricular Septal Defect (VSD), Coarctation of aorta, Critical pulmonary stenosis, Complete AVSD and Large VSD. 19 of 20 babies with duct dependent lesions were managed immediately with prostaglandin infusion and all 6 cases with cardiac failure treated with diuretics. 2 sick babies underwent life saving balloon septostomy in these

hospitals performed by outreach cardiac team. 30 day mortality was 16%.

**Conclusion:** These were complex, critical and most commonly cyanotic heart diseases, majority undetected antenatally. Commencing prostaglandin is crucial in suspected duct dependent lesions. Routine post-natal pulse-oximetry and facility to have echocardiography in district general hospitals help in appropriate management.

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**MYOCARDIAL PERFORMANCE INDEX (TEI INDEX) IN TERM NEONATES-PRELIMINARY STUDY**

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**Background:** To define age-related changes in left and right ventricular function using myocardial performance index (Tei Index) in healthy term newborn infants.

**Materials and methods:** 9 newborn infants were selected from normal full-term healthy neonates with gestational age 38-42 weeks, mean birth weight 3572 g (min. 2870, max. 4160 g). The Tei Index is a Doppler myocardial performance tool which can be used to evaluate of systolic and diastolic function. The first measurement was taken as soon as possible after birth, the second one was taken on day 3 of life.

**Results:** The higher Tei index were obtained in the right ventricle (mean value - 0,44; SD +/-0,11) then the left ventricle (mean value - 0,31; SD +/-0,07) in the first day of life. In the left ventricle the Tei index were converted during the first three days of life (from mean value 0,31 to 0,37), and we observed the conversion in the right ventricle too between the first and the third day of life (mean value 0,44- day 1 to 0,26 -day 3).

**Conclusion:** In neonates, the diastolic and systolic fuction of the right ventricle were higher then those measured in the left ventricle during the first day of life and this ratio changing in the third day of life. Higher mean value Tei index in the right ventricle might be reflecting the "persistent" fetal status of this ventricle in the first day of life. Further investigations