

(two patient groups and control group). In group A patients with isolated cyanotic congenital heart disease were enrolled. Group B consisted of the patients with cyanotic congenital heart disease with other concomitant diseases. Group C included the healthy control group. For the neurodevelopmental evaluation Bayley Scale of Infant Development- II was used.

**Results** Thirty eight patients (32 in group A and 6 in group B) and 33 healthy subjects in group C were included in the study. Mean age of the patient group was  $22,5 \pm 11,2$  months. In group A the mental developmental index (MDI) ( $82,5 \pm 14,7$ ) was significantly lower than group C ( $92,3 \pm 6,9$ ) ( $p = 0,001$ ). Similarly the psychomotor developmental index (PDI) in group A ( $82,0 \pm 18,2$ ) was found significantly lower than group C ( $92,5 \pm 7,4$ ) ( $p = 0,003$ ). When group A and B were compared, mean MDI and PDI scores were lower in group B, but the difference was not statistically significant. For group A, according to the psycomotor development index 48,6% of the patients were found mild to severe retarded. In terms of the mental development index, 34,4% of the pateints were with moderate or mild retardation.

**Conclusions** Mental-motor retardation is frequently encountered in children with cyanotic congenital heart disease. For this reason, these children have to be under regular follow up for neurodevelopmental status.

**PS-025 ESTIMATION OF USEFULNESS OF NON-INVASIVE CARDIOVASCULAR DIAGNOSTIC SCREENING METHODS IN EARLY DETECTION OF CRITICAL CONGENITAL HEART DEFECTS IN NEWBORNS**

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Prevalence of critical congenital heart defects (CCHD) is 1.5–3/1000 newborns. Early discharge from nurseries may postpone CCHD detection. There is a search for additional screening modalities for early diagnosis of CCHD.

**Aim** 1. Estimation of usefulness of physical examination (PE), pulse oximetry (POX) and echocardiography (ECHO) in CCHD screening detection

2. Evaluation of parents' attitude to POX as CCHD diagnostic screening modality

**Methods** PE, POX, ECHO were done in all well newborns born during two year period in one hospital. PE was performed routinely, POX was done > 24th hour of life (cut-off < 95%). ECHO was carried out before discharge in asymptomatic newborns or after abnormal PE or POX. Statistical analysis was performed.

**Results** Among 4589 babies, 311 were excluded. CHD was diagnosed in 103 newborns. CCHD was detected in 10 newborns (2.3/1000) based on: PE in 5, POX in 9, and ECHO in 10. Pulse oximetry approval questionnaire showed that 95% of mothers

participated in the study without hesitation and more than 99% approved the idea of implementing population pulse oximetry screening.

**Conclusions**

1. PE supported by POX provide optimal early neonatal CCHD detection screening.
2. Screening ECHO detects insignificant cardiovascular problems, leading to unnecessary follow-up.
3. POX as the CCHD screening test is unanimously accepted by parents.

**PS-026 CEREBRAL AND RENAL OXYGEN SATURATION AND EXTRACTION IN NEONATES WITH LEFT VENTRICULAR OUTFLOW TRACT OBSTRUCTION**

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**Background and aim** Neonates with left ventricular outflow tract obstruction (LVOTO) are at risk of developing brain damage, due to either ischemia or hypoxemia. Our aim was to explore the differences in cerebral and renal tissue oxygen saturation (rSO<sub>2</sub>) and extraction (FTOE) between neonates with LVOTO with or without compromised antegrade ascending aortic flow.

**Methods** We included fourteen neonates with LVOTO and categorised them into neonates with compromised antegrade ascending aortic flow (hypoplastic left heart syndrome (n = 6)) and neonates without compromised antegrade ascending aortic flow (coarctatio aortae (n = 7)/non-critical aortic valve stenosis (n = 1)). We measured cerebral and renal rSO<sub>2</sub> using near-infrared spectroscopy during 72 h. Simultaneously, we measured preductal arterial oxygen saturation (SpO<sub>2</sub>) and calculated FTOE.

**Results** On day 1, neonates with compromised antegrade ascending aortic flow had lower cerebral rSO<sub>2</sub> than neonates without compromised antegrade ascending aortic flow (median rSO<sub>2</sub> 68.5% vs. 79.4%, p-value = 0.032). Furthermore, cerebral FTOE tended to be higher in neonates with compromised antegrade ascending aortic flow on day 1 (median FTOE 0.30 vs. 0.14, p-value = 0.086). Significant differences in cerebral rSO<sub>2</sub> and FTOE disappeared the following days. There were no differences in SpO<sub>2</sub>, renal rSO<sub>2</sub> and FTOE between both groups.

**Conclusions** Because there were no differences in SpO<sub>2</sub> between both groups, and cerebral FTOE tended to be higher in neonates with compromised antegrade ascending aortic flow, the lower cerebral oxygen saturation might be due to ischemia rather than hypoxemia. Furthermore, in neonates with antegrade ascending aortic flow, cerebral oxygenation might be spared.

**PS-027 STRATIFICATION OF COMPLEXITY IN CONGENITAL HEART SURGERY: COMPARISON BETWEEN RACHS-1 (RISK ADJUSTMENT FOR CONGENITAL HEART SURGERY), ARISTOTLE AND STS-EACTS METHODS**

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**Abstract PS-025 Table 1** Statistical comparison of screening modalities

	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	LR+	LR-	ROC AUC
PE	50	100	100	98,8	-	0,5	0,74
POX	90	99,9	69,2	99,9	900	0,1	0,95
ECHO	100	100	100	100	-	0	0,98