Background and aims To determine whether stratification of complexity methods in congenital heart surgery (RACHS-1, Aristotle and STS-EACTS) fit to our centre and determine the best method in discriminating hospital mortality.
Methods Surgical procedures in patients under 18 age were allocated to the categories proposed by the three methods currently available. The outcome in-hospital mortality was calculated for each category. Statistical analysis using the chi-square Pearson test was performed to verify whether the categories presented different mortalities. The categories' discriminatory ability of each method was determined by calculating the area under the ROC curve and a comparison between the curves was performed.
Results 360 patients were allocated by the 3 methods. There was a statistically significant difference between the mortality categories: RACHS -1(1) - 1.3%; (2) - 11.4%; (3) - 27.3%; (4) - 50%, ($p < 0.001$), Aristotle (1) - 1.1%; (2) - 12.2%; (3) - 34%, (4) - 64.7%, ($p < 0.001$) and STS - EACTS (1) - 5,5%, (2) - 13.6%, (3) - 18.7%, (4) - 35.8%, ($p < 0.001$). The three methods had similar accuracy by calculating the area under the ROC curve (RACHS - 1–0.738; STAT - 0.739; Aristotle - 0.766).
Conclusion The three methods of stratification of complexity currently available in the literature are useful with different mortalities among the proposed categories and similar discriminatory capacity for in-hospital mortality in our centre.

PS-028 NEUROCOGNITION IN CHILDREN WITH CONGENITAL HEART DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background and objective Children with congenital heart disease (CHD) may experience difficulties in academic and daily life functioning. Intelligence and neurocognitive skills have been associated with these difficulties. The aim of this systematic review and meta-analysis is to assess intelligence in comparison with neurocognitive skills, like memory, attention and executive functions, in children with CHD.
Methods A comprehensive search of electronic databases PubMed, Embase and Cochrane was conducted for studies measuring intelligence, memory, attention and executive functions in children with CHD. Standardised mean differences (SMD's) between the CHD-group and a healthy control group were calculated for these neurocognitive functions.
Results 28 studies were retrieved, of which 10 tested a healthy control group. Children with CHD (median age 7.4 years; median sample size 20) scored worse than healthy control children for all investigated neurocognitive functions. A medium effect size was found for intelligence (SMD = -0.53 [95% CI: -0.71 to -0.35] $p < 0.00001$). Effect sizes, ranging from -0.41 to -0.53, were similar for memory, global executive function and non-reaction time measures of attention and executive functions. Executive function reaction time had the largest effect size (SMD = 0.76 [95% CI: 0.48 to 1.05]; $p < 0.00001$).
Conclusions Children with CHD risk lower performance on intelligence and neurocognitive skills. Only executive function reaction time showed a large effect size. A high diversity in research practices and small sample sizes were also ascertained. Large, more standardised, long-term follow-up studies of neurocognitive skills are required for a better understanding of these deficits and their impact on daily life functioning.

PS-029 THE EFFECT OF CONGENITAL CYANOTIC AND ACYANOTIC HEART DISEASE (CHD) ON INTRAUTERINE GROWTH

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Introduction The heart-placental axis utilises many common molecules and genes and reflects intimate and synergistic growth of both organs. Abnormal cardiac development leading to CHD can be associated with abnormal placentation and abnormal transfer of nutrients and oxygen.
Objectives We measured the anthropometric parameters (length, weight and head circumference) and the placental weight of 49 FT newborns (gestation period > 36 weeks) infants with CHD {(cyanotic (n = 8) and acyanotic (n = 41)} diagnosed clinically and by echocardiography and compared these data with those for randomly selected normal FT newborns (n = 104).
Results Newborn infants with CHD were significantly shorter and had lower birth weight and smaller head size compared to normal newborns. Their placental weights were significantly decreased compared to those for normal newborns. However, there was no statistically significant difference in the anthropometric parameters of infants with cyanotic versus acyanotic heart disease.
Discussion The intrauterine growth restriction in newborn infants with CHD may represent an adaptive mechanism to cope with the compromised perfusion caused by the congenital cardiac anomaly. However, this restricted growth can pose a risk for postnatal development in these infants.
Conclusion In this study CHD was associated with significant affection of birth weight, length and head circumference and lower placental weight compared to normal newborns.

Abstract PS-029 Table 1

Anthropometric data and placental weight in newborn infants with congenital heart disease (CHD) versus normal.

	Placntal wt (g)	Birth Wt (g)	Birth length (cm)	Head circumf (cm)
Normal newborns n=104	677.6	3185.3	50.6	34.0
CHD newborns n =49	597.3*	2600 *	46.4*	31.7*
Acyanotic n= 41	588.64	2510.0	45.98	31.51
Cyanotic =n = 8	640.00	2870.0	48.56	32.69

* $p < 0.05$