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Nutritional Status of Children before and After Cardiac Surgery in Rewa District of Madhya Pradesh

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Abstract

Background: Congenital heart disease (CHD) is the most common anomaly among all congenital malformations and these children are more prone to malnutrition.

Methods: This is a prospective analytical study conducted in Pediatric cardiology clinic of Department of Paediatrics, of a tertiary level hospital.

Result: 40.00% patients were 7-12 Yrs age group. 62.00% patients were male and 38.00% patients were female. The significant improvement was seen in nutritional status after surgery. (p-value=0.042)

Conclusion: Overall statistically significants improved nutritional status was observed in all children after heart surgery.

Keywords: Congenital heart disease, nutrition,children.

Introduction

Congenital heart disease (CHD) is the most common anomaly among all congenital malformations and these children are more prone to malnutrition. [1,2] Although exact figures are not available, the burden of CHD in India is likely to be very large due to a very high birth rate, approximately 180,000 children are born with CHD yearly [3] but a very small proportion get corrective intervention in the first year of life due to lack of resources and awareness, so number of cases can be seen among young adults also. The estimated birth prevalence of CHD is 9 per 1000 live births in developed countries [4] which is approximately similar to India i.e. 8.7 per 1000 live births. [5]

Cardiac surgery with cardio pulmonary bypass (CPB) generates a systemic inflammatory response syndrome, which results in organ dysfunctions. This may lead to a prolonged ventilation, inotropic support and intensive care unit (ICU) stay. Along with the cardiac defect nutrient deficiencies including macro and micronutrients can aggravate the adverse outcomes arising out of the organ dysfunctions. Children with cyanotic CHD have hypoxia; cyanotic spells which affects their nutritional status due to inadequate calorie intake that leads to stunted growth. [6]

Children with acyanotic CHD have increased pulmonary blood flow, pulmonary hypertension and repeated chest infections, are more prone to develop malnutrition and growth retardation. [7] Studies from developed countries have reported that early correction of their congenital heart defects may improve their nutritional status.[8]

Material and methods

This is a prospective analytical study conducted in Pediatric cardiology clinic of Department of Paediatrics, of a tertiary level hospital.

110 post cardiac surgery patients were identified from which 70 patient were contacted and 20 patients were died of both sexes who had undergone surgery for heart disease at least 6 months back.

A structured Proforma and questionnaire were filled for every child enrolled in the study. The parents and children of study group were informed about the purpose of research and that by filling out the questionnaire they were giving their consent to take part in the research.

Statistical Analysis

Data were tabulated using Microsoft office — Excel sheet andanalysed using the ANOVA. Frequencies and percentages were calculated for all the categorical variables. P-value < 0.05 considered as significant.

Results

Table- 1: Distribution of patients with respect to age (years)

Age Group	Frequency	Percentage
0-6 Yrs	13	26.00%
7-12 Yrs	20	40.00%
13-18 Yrs	17	34.00%
Total	50	100.00%

40.00% patients were 7-12 Yrs age group followed by 34.00% patients were 13-18 Yrs age group and 26.00% patients were 0-6 Yrs age group.

Table- 2: Distribution of patients with respect to Sex

Sex	Frequency	Percentage
Male	31	62.00%
Female	19	38.00%
Total	50	100.00%

62.00% patients were male and 38.00% patients were female.

Table- 3: Distribution of patients with respect to diagnosis

Diagnosis	Frequency	Percentage
RHD	21	42.00%
ASD	13	26.00%
VSD	9	18.00%
BAV/ AS	4	8.00%
TOF	3	6.00%
Total	50	100.00%

Table- 4: Distribution of nutritional status with respect to BMI

BMI	Before surgery	6 month after surgery	p-value
Normal	22(44.00%)	34(68.00%)	0.042
Moderate undernutrition	22(44.00%)	14(28.00%)	
Sever undernutrition	6(12.00%)	2(4.00%)	
Total	50(100.00%)	50(100.00%)	

The significant improvement was seen in nutritional status after surgery.

Discussion

With respect to individual diagnosis we got maximum number (n=21, 42%) of patients of Rheumatic heart disease followed by ASD (n=13), VSD (n=9) and TOF (n=3). This shows RHD is prevalent in our Rewa region which is also comparable to study of Elnur Tahirovi et al[9] where max patients (56.1%) belonged to CHD with left to right shunt.

In our study overall improved nutritional was observed in all children after heart surgery. This result is comparable to result obtained by Tahirovi et al[9]. It shows that further

improvement is required to alleviate cardiac symptoms in our setups.

Some limitations of this study are that most patients were not controlled in our center because we are a referral center, so we do not know some specific interventions from a nutritional point of view that may have existed. In that setting, anthropometry was performed by different evaluators and the reporting of anthropometric data was reported verbally.

Conclusion

Overall statistically significants improved nutritional status was observed in all children after heart surgery.

References

1. Salzer HR, Haschke F, Wimmer M et al. Growth and nutritional intake of infants with congenital heart disease. Pediatr Cardiol 1989; 10:17-23.
2. Menon G, Poskitt EME. Why does congenital heart disease cause failure to thrive? Arch Dis Child 1985; 60:1134-1139.
3. Saxena A. Congenital heart disease in India: a status report. Indian J Pediatr. 2005 Jul;72(7):595–8.
4. Van der Linde D, Konings EEM, Slager MA et al. Birth Prevalence of Congenital Heart Disease Worldwide. J Am Coll Cardiol. 2011 Nov;58(21):2241–7.
5. Saxena A, Mehta A, Sharma M et al. Birth prevalence of congenital heart disease: A cross-sectional observational study fromNorth India. Ann Pediatr Cardiol. 2016 SepDec; 9(3): 205–209.
6. Varan B, Tokel K, Yilmaz G. Malnutrition and growth failure in cyanotic and acyanotic congenital heart disease with and without pulmonary hyper-tension. Arch Dis Child 1999; 81: 49-52.
7. Rhee EK, Evangelista JK, Nigrin DJ et al. Impact of anatomic closure on somatic growth among small asymptomatic children with secundum atrial septal defect. Am J Cardiol 2000; 85: 1472-1475.
8. Weintraub RG, Menahem S. Early surgical closure of a large ventricular septal defect: influence on long-term growth. J Am Coll Cardiol 1991; 18: 552-558.
9. Tahirović E, Begić H, Tahirović H, W Varni J. Quality of life in children after cardiac surgery for congenital heart disease. Collegium antropologicum. 2011 Dec 30;35(4):1285-90.