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„Aspects of short- and long-term postoperative care for pediatric patients after cardiac surgery”

Introduction

Congenital heart defects constitute the most common group of congenital anomalies in the pediatric population and represent one of the leading causes of hospitalization and specialized medical treatment in children. The estimated prevalence of congenital heart defects is approximately 8–10 per 1,000 live births. Owing to advances in prenatal diagnostics and the development of modern cardiac imaging techniques, these defects are increasingly diagnosed during the fetal period or within the first days of life. Contemporary pediatric cardiac surgery and the progress achieved in pediatric intensive care have significantly improved treatment outcomes, resulting in a substantial increase in the survival rate of children with congenital heart defects. Consequently, an increasing number of patients reach adulthood and are able to lead active social lives. However, with the improvement in survival rates, the importance of assessing long-term treatment outcomes has also increased. These outcomes should not be evaluated solely on the basis of clinical parameters or diagnostic findings. Growing attention is therefore being paid to the assessment of quality of life following cardiac surgery, as chronic illness and repeated hospitalizations may affect a child's physical, emotional, and social functioning. Health-related quality of life (HRQoL) is a multidimensional concept encompassing physical health status, psychological well-being, level of activity, social relationships, and the ability to participate in school and family life. In children with congenital heart defects, particular importance is attributed to the analysis of changes in quality of life before and after surgical treatment. Cardiac surgery may lead to improved physical functioning and a reduction in symptoms of heart failure. Nevertheless, the experience of illness, hospitalization, and treatment may also affect the emotional well-being of both the child and their family. Therefore, the assessment of quality of life represents an important component of the comprehensive evaluation of treatment effectiveness and contributes to a better understanding of the needs of pediatric patients during the therapeutic and rehabilitation process.

Aim of the Study

The aim of this study was to assess changes in the quality of life of children with congenital heart defects before and after cardiac surgical treatment. Particular attention was paid to selected aspects of

physical functioning, the level of the child's daily activity, and psychosocial functioning as perceived by parents or legal guardians. An additional objective of the study was to identify clinical factors that may influence the quality of life of children following cardiac surgery, including the type of congenital heart defect, the number of surgical procedures performed, the course of hospitalization, and the presence of postoperative complications. The analysis of these factors allows for a better understanding of the extent to which surgical treatment influences a child's functioning in everyday life. Another objective of the study was to determine whether cardiac surgical treatment contributes to improved exercise tolerance, increased independence, and a reduction in symptoms associated with heart disease. The results obtained may provide a basis for further research on the quality of life of children with congenital heart defects and may contribute to improved planning of comprehensive medical and psychosocial care for this group of patients.

Material and Methods

This study had a retrospective observational design and was conducted using an original questionnaire addressed to parents or legal guardians of children with congenital heart defects who had undergone cardiac surgical treatment. The research tool was developed to evaluate changes in the child's quality of life in the period before and after surgical intervention. The questionnaire included questions concerning basic demographic data of the child, the type of congenital heart defect, and the course of treatment. It also contained items related to the child's functioning in everyday life, including the level of physical activity, independence in performing daily activities, the occurrence of symptoms such as dyspnea or easy fatigability, and an overall assessment of the child's quality of life. In some sections of the questionnaire, respondents were asked to compare the child's functioning before surgical treatment with their functioning after the completion of therapy. In addition, selected clinical data related to the course of the disease and treatment were analyzed, including the type of congenital heart defect, the number of cardiac surgical procedures performed, and the presence of postoperative complications. The collected data were subsequently subjected to statistical analysis in order to evaluate potential associations between selected clinical factors and changes in the quality of life of children following surgical treatment.

Results

The analysis of the collected data demonstrated that cardiac surgical treatment in children with congenital heart defects led, in the majority of cases, to an improvement in physical functioning and

increased exercise tolerance. Parents or legal guardians reported that after surgical intervention children more frequently participated in physical activities and less often experienced symptoms such as dyspnea, rapid fatigue, or limitations in physical activity. In many cases, an improvement in the child's overall daily functioning was also observed. At the same time, some parents reported the persistence of certain limitations in physical activity. These limitations resulted both from medical recommendations and from concerns about a potential deterioration in the child's health condition. In some cases, the presence of heart disease and the process of treatment also influenced the child's psychosocial functioning. Parents indicated, among other factors, an increased level of anxiety, the need for more frequent follow-up medical visits, and limitations in daily activities resulting from the necessity of monitoring the child's health status. These findings suggest that despite improvements in clinical parameters, cardiac surgical treatment does not always eliminate all difficulties related to the child's functioning within the social environment.

Conclusions

Cardiac surgical treatment of children with congenital heart defects contributes to a significant improvement in quality of life, particularly in terms of physical functioning and the ability to engage in physical activity. Improvement in hemodynamic status following surgical intervention leads to a reduction in symptoms of heart failure and allows children to participate more actively in everyday activities. Despite the improvement in clinical condition, some patients continue to experience limitations in physical or psychosocial functioning. This may result both from the chronic nature of the disease and from the need for ongoing medical follow-up and adherence to recommendations regarding physical activity. The results obtained indicate that the assessment of quality of life should constitute an important component of monitoring treatment outcomes in children with congenital heart defects. Comprehensive care for pediatric patients should include not only medical treatment but also rehabilitation, psychological support, and family education, which may contribute to further improvements in the functioning and well-being of children after cardiac surgical treatment.