INTENSIVE POSTOPERATIVE CARE FOR PAEDIATRIC PATIENTS WITH CONGENITAL HEART DISEASE UNDERGOING CARDIAC SURGERY

Thesis
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By

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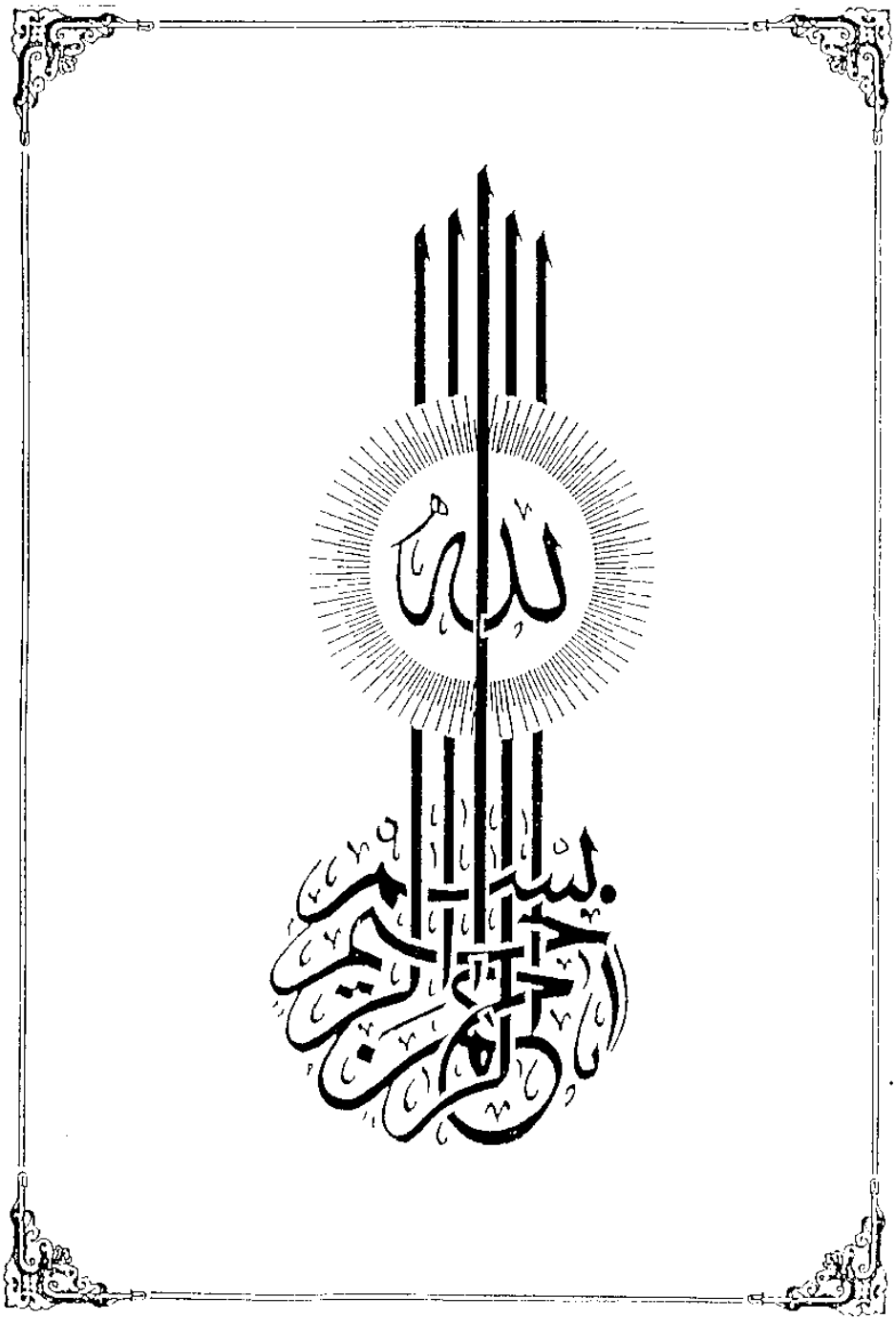

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ABSTRACT

Abstract

An integrated protocol for postoperative management of children following surgical correction of acyanotic congenital heart disease was deduced in this study. Fifty children with assorted acyanotic congenital heart lesions were studied in their immediate postoperative period in the intensive care unit. Mortality, duration of stay, duration of mechanical ventilation, as well as the occurrence of different complications were observed.

Hospital mortality was 6%; with no recorded cases among the atrial septal defect patients. Duration of intensive care stay ranged between 30 and 72 hours among survivors: being the least among atrial septal defect patients. Pharmacological cardiovascular support was required among 50 % of the patients; it exhibited a positive statistically significant relation with an advanced NYHA functional class of the patient together with the occurrence of low intraoperative cardiac output.[P <0.001]. Mean duration of mechanical ventilation was 26.5 ± 7 hours : being significantly high among hospital mortality group [P<0.001]. A positive statistically significant relation existed between the duration of controlled ventilation and age, ASA class, NYHA, cardiopulmonary bypass and aortic clamp times, low cardiac output and infection [P values: 0.047, 0.01, 0.01, 0.001 and 0.001; respectively]. Infection, bleeding, neurological and renal complications were also reported and tackled promptly.

Concluding this work, a complete system was introduced to deal with the different body systems of the child in a co-

ordinated manner, thus reducing mortalities, improving the results and ameliorating the complications following surgical correction of congenital lesions among those fragile hearts.

Key words: Protocol, Intensive care, surgery of acyanotic congenital heart disease, mechanical ventilation, haemodynamic support, postoperative complications.

INTRODUCTION

The era of surgical correction of congenital heart disease was ushered in when Dr. Robert Gross successfully ligated a patent ductus arteriosus in 1938[Rosenthal, A., 1975]. Since then, almost all the congenital malformations were surgically attacked. [Morris, Jill H., 1975].

In the last decade, the surgeons ingenuity and improved techniques have resulted in successful repair of the most complex malformations. Recently, the most profound and far reaching changes have been the introduction of the one-stage surgical correction instead of palliation followed by total correction in childhood. This corrective surgery in the neonate and the child has significantly altered the pattern and quality of life.[Rosenthal, A., 1975].

Survival and relief of symptoms are the immediate goals of surgery. The long term objective of surgical and medical treatment for infants and children with cardiovascular malformations remains to provide optimal physical, intellectual and emotional growth that will enable them to be healthy adults. Thus, surgery represents an undisputed value in the management of such category of congenital disability. [Morris, Jill, H., 1975].

The development of surgical procedures has been accomplished, hand in hand, with the development of the anaesthetic techniques together with the evolution of intensive care units with its advanced monitoring means and efficient continuous follow-up. All these developments have markedly elevated the outcome of

surgical correction, together with the improved performance and longevity of congenitally-heart diseased children.

The outcome of these surgeries doesnot only depend upon the surgical procedure, but also on the postoperative pattern employed to these patients. Consequently, the emergence of intensive care units for care of those patients was a must. Those units have undergone marked development due to introduction of recent technology and the introduction of invasive and non- invasive techniques for accurrate observation of different body systems. In spite of this, there remains the " Team work " system which is required for the coordination of management of these units.

This work was conducted to install a complete detailed protocol to be followed by the intensive care team managing children who have undergone surgical correction of their heart defects. It comprised nearly all the body systems in an integrated fashion so as to improve the results and ameliorate the complications which were liable to occur during that critical period.

REVIEW OF THE LITERATURE