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Original Research Article

The Pattern and Treatment of Congenital Heart Diseases in Children: A Project Study at Dhaka Shishu Hospital under Dhaka District, Bangladesh

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Abstract: The objective of this study is to observe the pattern and treatment of congenital heart diseases at Dhaka Shishu (Children) Hospital. New born children presenting with various forms of congenital heart disease is a common problem now a days. Neonatologists and pediatricians are now more conscious about early detection and treatment of newborn with congenital heart diseases. Diagnostic facilities are also available in many places. So an individual incidence recorded from an ideal center of our country is a demand of the time which led carrying out this study. This prospective study was carried out at Dhaka Shishu (Children) Hospital in Dhaka District from 6th August 2014 to 15th August 2014. In this hospital, questionnaire sheets were provided as a representative of the survey, a total 13 questionnaire were processed for patient survey and total of 130 questionnaire sheets for the patients and their parents (patients were of the age wherein if they were not able to answer then, their parents answered the questions.) were considered. In Dhaka Shishu (Children) Hospital, registered physicians were interviewed, they are all (around 25 registered physicians) specialized individual sectors and they are responsible for patient healthcare service. All the clinical dealings of hospital is a prime concern of appointed doctors. Ethical concern of hospital authority, doctors and at the same time, patients was taken before study implementation. Among 130 patients 92% were congenital heart patients and 8% were diagnosed with other diseases. Various congenital heart diseases were noted like obstructed blood flow (46%), abnormal blood vessel (25%), heart valve abnormalities (17%), holes in heart (8%) and underdeveloped heart patients (4%) respectively. 96% of the total congenital heart patients had family history of congenital heart diseases, 63% had patients and 33% had grandparents affected by congenital heart diseases) and 4% were out of it. Some Patients (35%) were treated by drugs like ACE inhibitors (10 patients), ARB (15 patients), Beta blocker (5 patients) and diuretics (12 patients) and rest of the patients were treated by surgery like procedures during catheterization (55 patients), Open heart surgery (18 patients) and heart transplant (05 patients) respectively. With the best infrastructure and Medical facilities, Dhaka Shishu Hospital moves it's every step for child's health care accompanied. For giving the best treatment, all the medical members do very hard work. Survey data show that there is a high occurrence of congenital heart disease in this hospital and that isolated obstructed blood flow (46%) is the predominant pathology. Post-surgical follow up remains very challenging as many parents cannot afford their children's medical treatment or are generally not well educated.

Keywords: Congenital heart diseases, child treatment, survey data, child's health.

INTRODUCTION

A congenital heart defect is a problem with the structure of the heart. It is present at birth. Congenital heart defects are the most common type of birth defect. The defects can involve the walls of the heart, the valves of the heart, and the arteries and veins near the heart. They can disrupt the normal flow of blood through the heart [1, 2]. The blood flow can slow down, go in the wrong direction or to the wrong place, or be blocked completely. Congenital heart disease is a category of heart disease that includes abnormalities in cardiovascular structures that occur before birth. These defects occur while the fetus is developing in the uterus and may affect approximately 1 in 100 children [3, 4]. Congenital heart defects may produce symptoms at birth, during childhood, or not until adulthood. Other congenital defects may cause no symptoms. Women with congenital heart disease who wish to become pregnant should talk with their doctors before becoming pregnant. They should discuss possible risks, as well as any special care they might need during pregnancy [5, 6]. A successful pregnancy is possible if one had a congenital heart disease, especially if defect was mild. However, some women with complex congenital heart defects may be advised against pregnancy [7]. It's important for both men and women to know that if they have congenital heart disease, there may be an increased risk of passing on some form of congenital heart disease to their children. Doctor may suggest genetic

counseling to help one predict the risk of passing on inherited forms of congenital heart disease [8, 9].

METHODOLOGY

Study design

The survey was conducted at the Dhaka Shishu (Children) Hospital in Dhaka District. At the DSH our survey sample was drawn from the target population and obtained information were collected for acceleration of study.

Sample Selection

In Dhaka Shishu (Children) Hospital in Dhaka District, I provided with questionnaire sheets as a representative of the survey, a total 13 questionnaire were processed for patient and their parents (patients were of the age wherein if they were not able to answer then, their parents answered the questions.) survey and total of 130 questionnaire sheets for the patient survey (random selection of patients) were considered. In Dhaka Shishu (Children) Hospital in Dhaka District, registered physician (specialized individual sectors and responsible for patient healthcare service) were interrogated .

Field work

The survey data were collected from the Dhaka Shishu (Children) Hospital in Dhaka District, from 6th August 2014 to 15th August 2014, which fast-tracks the development of study tools, collection of data and analysis.

Data collection and Analysis

This paper and pencil field survey consisted of open, closed ended and multiple choice questions. An English language survey was developed based on information drawn from relevant literatures pertaining to use of Prescription drugs in Bangladesh. Separate questionnaires were prepared for patient survey. Questionnaires for congenital heart diseased patients were related to age, height, patient history and list of drugs and surgery needs included.

Methods of data collection

In this survey the statistical analysis were performed using MS Excel 2007.

Patient Category

Congenital heart disease

Place of investigation

Dhaka shishu (children) hospital, cardiac department, outdoor and indoor.

Questions for the patients are as follows

Questionnaires on Pattern and Treatment of Congenital heart disease

- Are you suffering from congenital heart diseases?
- What is your Age?
- What is your sex?
- What is your body Weight (kg)?
- What is your height?
- What types of congenital heart diseases are you affected?
- How long you are suffering from congenital heart disease?
- Has anyone in your family ever been diagnosed with heart disease?
- What kinds of signs and symptoms are observed?
- What types of pathological test, you have done?
- What types of medications & supplements do you take?
- Will you need surgery?
- What types of surgery do you need?

RESULTS AND DISCUSSION

It was a discern, descriptive and analytical research. During the research period, exhaustively screened all patients satisfying inclusion criteria. Among 130 patients 92% were congenital heart patients and 8% were diagnosed with other diseases. When considered age, 36% were ≤ 3 years , 26% were 4-6 years, 22% were 7-9 years and 16% were above 10 years among the congenital heart patients (92%), [Table 1]. Female patients were 44% and male patients were 56% [Table 1]. In case of weight and height of patients, 36% were 5-10 kg and below 2 feet, 26% were 11-15 kg and 2.1-3 feet, 22% was 15-20 kg and 3.1-4 feet, 16% was above 20 kg and above 4 feet respectively [Table 1]. Various congenital heart diseases were noted like 46% were obstructed blood flow, 25% were abnormal blood vessel, 17% were heart valve abnormalities, 8% were holes in heart and 4% were underdeveloped heart patients respectively [Figure 1]. When asked about their duration of diseases, 37% patients were below 1 year, 28% were 1.1-2 years, 19% were 2.1-3 years and 16% were above 3 years affected by diseases respectively. 96% of the total congenital heart patients had family history of congenital heart diseases, 63% had patients and 33% had grand - parents affected by congenital heart diseases and 4% were out of it [Figure 2]. The most common sign and symptom was rapid breathing (115 patients) then pale gray or, blue skin colour (cyanosis) (110 patients), next swelling in the legs, abdomen or, eyes area (80 patients), shortness of breath during feeding (76 patients), grunting when breathing (70 patients), and flared nostrils (50 patients) respectively [Table 2]. Pathological tests were done with Chest X-ray, Pulse oximetry, Electrocardiogram, Echocardiogram and cardiac catheterization. 100% patients did all tests accept cardiac catheterization (115 patients). Treatment can be provided like drug and surgery [Table 2]. 35% patients were treated by drugs like ACE inhibitors (10 patients), ARB (15 patients), Beta blocker (5 patients) and diuretics (12 patients). 65% patients were treated by surgery like procedures during catheterization (55 patients), Open heart surgery (18 patients) and heart transplant (05 patients) respectively.

Table 1: Congenital heart patients Patient's demographics

Age	Number of patients	%
≤ 3 Yr	44	36
4-6 Yr	31	26
7-9 Yr	26	22
Above 10 Yr	19	16
Sex	**Number of Patient's**	**%**
Male	67	56
Female	53	44
Weight	**Number of patients**	**%**
5-10 kg	44	36
11-15 kg	31	26
15-20 kg	26	22
Above 20 kg	19	16
Height	**Number of patients**	**%**
Below 2 feet	44	36
2.1-3 feet	31	26
3.1-4 feet	26	22
Above 4 feet	19	16

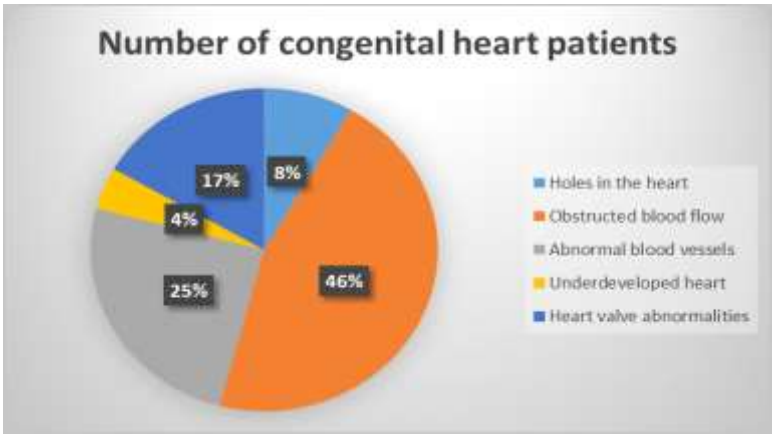

Fig-2: The types of congenital heart disease patients

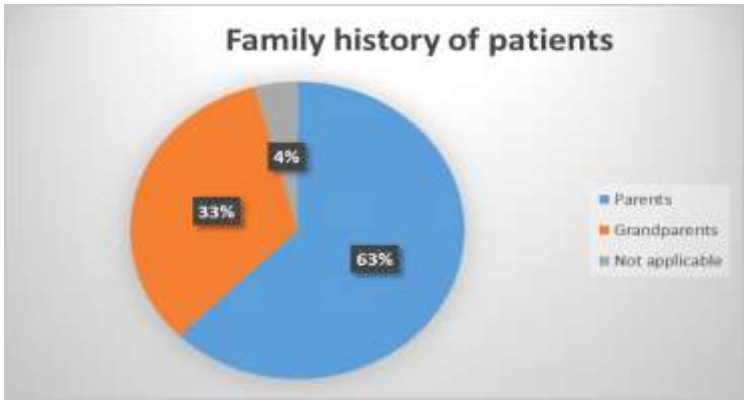

Fig-3: The graph of patient's family history of congenital heart problems

Table 2: Patient's sign & symptoms and pathological tests of congenital cardiac problems

Pathological Test	Number of patients	Sign and symptom	Number of patients
Cardiac catheterization	115	Rapid breathing	115
Pulse oximetry	120	Pale gray or, blue skin colour	110
Electrocardiogram	120	Flared nostrils	50
Echocardiogram	120	Swelling in the legs, abdomen or, eyes area	80
Chest X-ray	120	Shortness of breath during feeding	76
		Grunting when breathing	70

CONCLUSION

Congenital heart defect is a common birth defect, and a leading cause of deaths linked to birth defects. Congenital heart disease is far more treatable today than it used to be. The ultimate outcome of our survey is clear in case of patients data. 92% of all patients were suffering from congenital heart disease. To treat such patients needed both surgery (it could be catheterization, Open heart surgery and heart transplant) and drugs (it could be ACE inhibitors, ARB, Beta blocker and diuretics).

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