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THE EFFICIENCY OF PONSETI TECHNIQUE FOR THE TREATMENT OF CONGENITAL CLUB FOOT

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ABSTRACT

Introduction: Clubfoot is a birth defect where one or both feet are rotated inwards and downwards. The affected foot, calf, and leg may be smaller than the other. Most cases are not associated with other problems. Without treatment, people walk on the sides of their feet which cause issues with walking. The treatment of clubfoot has developed over time and can generally be divided into many approaches like: Kite method, Ponseti method, French Method and other surgical method. **Objective:** In this study our main goal is to evaluate the efficiency of Ponseti Technique for the Treatment of Congenital Club foot. **Method:** This study was a cross sectional studywas done at tertiary medical college and hospital Bangladesh and the sample was 100 patients under Ponseti clubfoot treatment over a period of one years from 1st October 2017 to 1st October 2018. **Results:** During the study, most of the clubfoot patient age range is 1month-5month (57%) and lowest patient age range is 3-year 6 month-4-year age patient (.50%).casting treatment by the Ponseti method in the present study indicated that the results were good in (75%) cases, medium in (25%) cases, and poor in (5%) cases.clubfoot reoccurred only in (3%) cases. Moreover, noncompliance with the treatment was seen in (5%). In addition, the results revealed that the treatment of clubfoot by Ponseti method was successful in (92%) cases. **Conclusion:** From our result we can conclude that, Ponseti method is very much useful and effective treatment for clubfoot patients.

KEYWORDS: Congenital Club foot, Ponseti Technique.

INTRODUCTION

Disability has developed as a general medical issue around the world. Childhood disability one of them and it stays covered up in creating nation like Bangladesh. Around one out of each 1,000 children are born with a foot that is curved. Which might have an odd shape and point in the wrong direction, so that it appears to be crooked, or even nearly upside down? Doctors call this clubfoot.[1] Clubfoot is a birth defect where one or both feet are rotated inwards and downwards. The affected foot, calf, and leg may be smaller than the other. Most cases are not associated with other problems. Without treatment, people walk on the sides of their feet which causes issues with walking. The treatment of clubfoot has developed over time and can generally be divided into many approaches like: Kite method, Ponseti method, French Method and other Surgical method.

In 1963, Ponseti and Smoley reported the results in 67 patients with 94 clubfeet who were treated at their clinic by means of serial manipulations and castings.[1] The initial success rate was about 80%. Since 1990s this method was refined later on and has been used throughout the world particularly after the long-term successful result was reported during an average of more than 30-year follow-up. In more and more medical centers this method was introduced.[2] One study reported in their study that they treated 34 feet, of which only 1 foot required extensive posteromedial release after serial casting with or without percutaneous Achilles tenotomy.[3] Another article reported that, an initial correction rate of 95%.[4] Moreover, other medical centers in different nations also reported that 92%–100% clubfeet in their patients, whose age at the time of presentation was usually less than 1 year, responded to initial manipulation and casting as described in the Ponseti protocol.[5] Other study found that the Ponseti method was also effective in children between the ages of 1 to 3 years, and they reported an initial successful rate of about 89%.[6] The Ponseti method is also effective in the non-idiopathic clubfoot.

In this study our main goal is to evaluate the efficiency of Ponseti Technique for the Treatment of Congenital Club foot.

OBJECTIVE

General Objective

- To evaluate the efficiency of Ponseti Technique for the Treatment of Congenital Club foot.

Specific Objective

- Identify demographic status of clubfoot patients.
- Evaluate treatment outcome of the clubfoot patients.

METHODOLOGY

Study Type

This study was across sectional study.

Study Place and Period

This study including patients' information during treatment period was done at tertiary medical college and hospital, Bangladesh and the sample was 100 patients under Ponseti clubfoot treatment over a period of one years from 1st October 2017 to 1st October 2018.

Method

After the parents were provided with necessary explanations on the treatment technique, outcomes, complications, duration, and visits, informed written consent to participate in the study was obtained from them. Afterward and before the treatment, data on the neonates' age, gender, education of parents, family history, and compliance of family with a brace were collected through a checklist.

Data analysis

- Statistical analyses will be carried out by using Windows based Statistical Package for Social Sciences (SPSS-22). The descriptive statistics of the study will be presented in tables, figures or suitable graphs, mean ± SD as per the requirement of qualitative and quantitative variables. Mean comparison between two groups will be done by Student's t-test<0.05 will be considered as statistically significant.

RESULTS

In figure-1 shows age of the patient, where most of the clubfoot patient age range is 1month-5month (57%) and lowest patient age range is 3-year 6 month-4-year age patient (.50%). The following figure is given below:

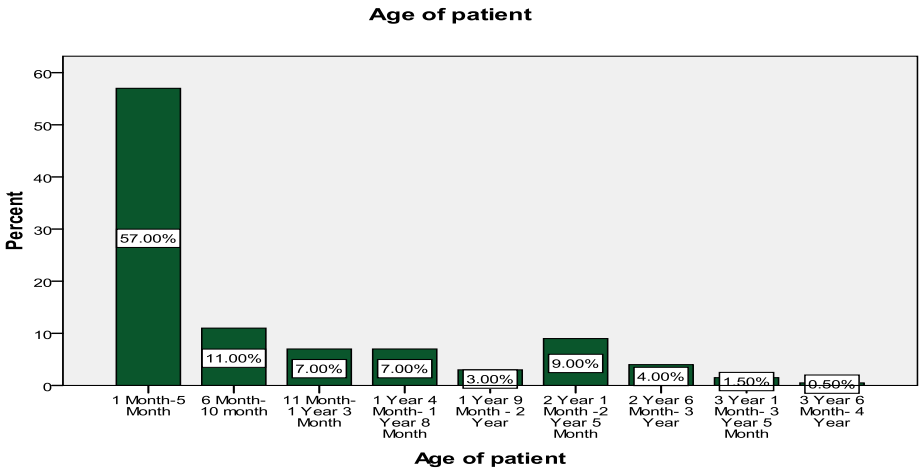

Figure 1: Age group of the patient.

Intable-2 shows sociodemographic characteristics of the patients where (70%) were males and (30%) were females. With regard to the types of clubfoot, (25%) cases were bilateral, (65%) unilateral, (45.5%) right, and (54.5%) left. The following figure is given below in detail:

Sociodemographic characteristics	%
Gender	
Male	70%
Female	30%
Diagnosis:	
Bilateral	25%
Unilateral	65%
Right	45.5%
Left	54.5%
Family Status	
Positive	10%
Negative	90%
Place of Residence:	
Urban	56%
Rural	44%

Table-3 shows casting treatment by the Ponseti method in the present study indicated that the results were good in (75%) cases, medium in (25%) cases, and poor in (5%) cases. The following table is given below in detail:

Table-3: Outcome of Ponseti method.

Outcome	%
Good	75%
medium	25%
Poor	5%

Table-4 shows status of the patients after the treatment where the results indicated that clubfoot reoccurred only in (3%) cases. Moreover, noncompliance with the treatment was seen in (5%). In addition, the results revealed that the treatment of clubfoot by Ponseti method was successful in (92%) cases. The following table is given below in detail: The following table is given below in detail:

Table-4: Status of the patients after the treatment.

Status of the patients after the treatment	%
Recurrence	3%
Noncompliance	5%
Successful	92%

DISCUSSION

Long-term analysis and outcomes studies have shown that the Ponseti method of treatment to be superior to prior surgical techniques, which has resulted in the majority of providers who treat clubfeet switching to the Ponseti method. If patient maintain that correction during early childhood then most patients with clubfoot can achieve satisfactory initial correction. Adherence with the foot-abduction brace has been shown in multiple studies to decrease likelihood of recurrence, however, adherence with bracing does not guarantee successful long-term correction. Despite adherent bracing, some feet seem almost destined to relapse, whereas poorly braced feet sometimes maintain correction over the long term. In other study proved thatponsetimethod offers superior results, compared with Kite method, till first week of life. It is worthy noticing that, in baby's, not only the Dimeglio score was most significantly improved but also the 6 months' rate of relapses was also lower in the Ponseti group, this observation being in line to other researches.[5-6] Ponseti method superiority was also proved for the correction rate and functional outcome. The median success rate is 58% to 79% for Kite and 78% to 98% for Ponseti method.[7-8] In numerous studies, the superiority of Ponseti method was agreed, for both primary correction and uncorrected plus relapsed feet but the risk for over-correction and stiff scar healing was higher after Ponseti than Kite method.[5,9] Its superiority is also related on the lower cost and higher effectiveness and can also improve significantly the Kite recurrent clubfeet.[10,11] Many other study also determined that the initial correction rates of the clubfoot deformities were high with both methods (94.4% with Ponseticasting and 95% with the French functional method). This is consistent with the recent literature in which several short-term studies with use of the Ponseti method found initial correction rates in the range of 90% to 100%.[12-15]

CONCLUSION

From our result we can conclude that, Ponseti method is very much useful and effective treatment for clubfoot patients.

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