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The Evaluation of Hospital Social Responsibility Services in Gatot Soebroto Indonesia Central Army Hospital in 2015 – 2019 of Cleft Lip and Palate Patients

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ABSTRACT

Background: Cleft lip and cleft palate are the most common congenital craniofacial anomalies treated by plastic surgeons. The incidence of cleft lip and palate is higher at lower socioeconomic levels. Hospital Social Responsibility (HSR) in Gatot Soebroto Central Army Hospital provides free cleft lip and palate surgeries to those who need it the most. The HSR services still need to be evaluated, to get an overview of epidemiologic profile of cleft lip and palate patients, and to improve the services itself.
Materials and Method: The authors conducted a retrospective descriptive study based on online data of Smile Train HSR RSPAD Cleft Center from period of January 2015 to December 2019. All patients presented with cleft lip and/or palate were included.
Results: Of all 713 patients in total; The gender distribution male 62.2% (444/713) was higher than female 37.7% (269/713). Most of the patients came from Java Island 77.5% (553/713). 685 were primary surgeries, 28 secondary surgeries. Among the primary surgeries, lip repair has the highest numbers 71.6% (491/685), followed by palate repair 27.2% (187/685), and alveolar bone grafting 1% (7/685). The most widely used surgical technique in lip surgery was the Millard 50% (345/685), while the most widely used surgical technique in palate surgery was the Bardach technique 22.9% (157/685). The median age for the primary lip repair patients was 1 year (range, 3 months to 60 years), and the median age for the primary palate repair patients was 4 year (range, 7 months to 26 years). Among secondary surgeries, lip revision with Millard technique was the highest (82.1%), followed by scar revision 3.57%, fistula repair (7.1%). The most common diagnosis was unilateral cleft lip (left 34.4%, right 13.2%) and followed by complete cleft palate (22.7%)
Conclusion: Male patients were more dominant than females. The most common diagnosis was unilateral cleft lip. Incomplete diagnostic data and clinical photos of patients make it difficult to determine the complete diagnose of cleft lip and palate.

Keywords: cleft lip, cleft palate, primary surgery, secondary surgery

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INTRODUCTION

The most common congenital craniofacial abnormalities treated by plastic surgeons are cleft lips and cleft palate. Cleft lips with or without cleft palate (CL/P) and isolated cleft palate (ICP) are the types of clefts. Cleft lip is caused by the failure of the medial nasal prominence and the maxillary prominence to fuse between the 4th-7th weeks of embryonic development. Cleft palate is caused by the failure of the palatal shelves to fuse between the 8th and 12th weeks of embryonic development.[1]

Depending on ancestry, geographic location, maternal age, p renatal exposures, and socioeconomic status, CLP occurs in 1 in 500–2,500 live births. The latest CDC estimates report the incidence of CLP to be 1 in 940 live births, with 4,437 cases every year.[2] The global

prevalence of clefts is estimated to be between 1 and 2.21 ca ses per 1000 live births.[3] Incidence rate of cleft lip and/or palate in Indonesia was 1:1,000 per live birth.[4] Gender variation was also observed with 2: 1 male-female gender predominance for the incidence of cleft lip with or without cleft palate, in contrast to 1: 2 male-female gender dominance for cleft palate .The prevalence of cleft lip and palate is about 45% of the total cases, cleft lips 25% and cleft palate about 35%. [1,3]

Low socioeconomic status, illiteracy, various superstitions, l ack of awareness, and the distance to the nearest cleft centers might be the factors which delayed patients in receiving medical information and treatment for cleft lip and/or palate in developing country like Indonesia. The cost of cleft lip and palate surgery is still high, some of Indonesian people can't afford it, so social services are still in high demand in Indonesia. Hospital Social Responsibility (HSR) Services in Gatot Soebroto Indonesia Central Army Hospital collaborated with Smile Train has been performed routine surgeries for cleft lip and palate patients in several regions in Indonesia. The Hospital Social Responsibility Services in Gatot Soebroto Indonesia Central Army Hospital still need to be evaluated, to get overview of epidemiologic profile of cleft lip and palate patient and to improve the services itself. Therefore, this research is needed to evaluate the completeness of important data including age, gender, diagnosis, origin, appropriate intervention measures, and to monitor how many patients undergo the intervention each year.

MATERIALS AND METHODS

The authors conducted a retrospective descriptive study based on online database of Smile Train HSR RSPAD Cleft Center from period of January 2015 to December 2019. All patients presented with cleft lip and/or palate were included. The parameters were patients' geographical distribution, gender, diagnosis, type of surgery, and age of surgery. Non-medical background staff entered the data into a simple Excel® spreadsheet.

RESULTS

Cleft Lip and Palate surgeries done in five years included 713 patients in total. The gender distribution male 62.2% (444/713) was higher than female 37.7% (269/713). Most of patients came from Java Island 77.5% (553/713), followed by Sulawesi Island 15.1% (108/713), Kalimantan Island 6.3% (45/713), Papua Island 0.7% (5/713), and Sumatra Island 0.3% (2/713). The median age for the primary lip repair patients was 1 year (range, 3 months to 60 years), and the median age for the primary palate repair patients was 4 year (range, 7 months to 26 years).

Table 1. Patient characteristics

Gender	**N**	**% (n=713)**
Male	444	62.2 %
Female	269	37.7 %
Intervention	**Median (y.o)**	**Range**
Primary lip repair	1	3 mo – 60 yo
Primary palate repair	4	7 mo – 26 yo
Geography	**N**	**% (n = 713)**
Java Island	553	77.5
Sulawesi Island	108	15.1
Kalimantan Island	45	6.3
Papua Island	5	0.7
Sumatra Island	2	0.3

The number of patients treated in social services varies each year. As seen in the diagram below, shows the highest percentage of patients in 2015 34% (243/713), followed by 2016 32% (229/713), 2017 16% (113/713), 2019 9% (65 / 713), 2018 9% (63/713)

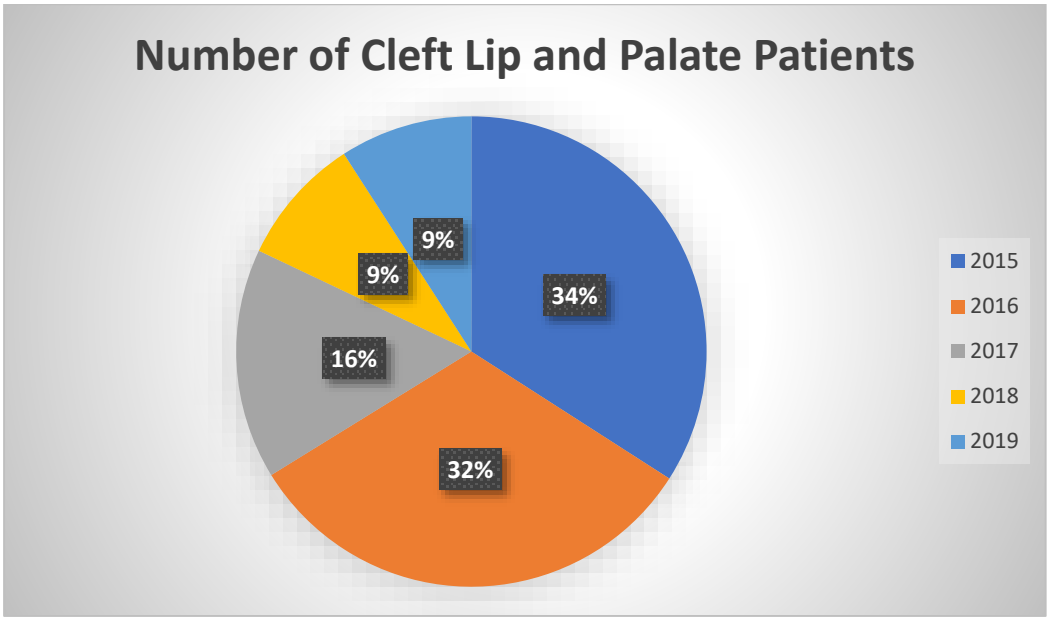

Fig 1. Number of HSR Cleft Lip and Palate Patients

Unilateral left cleft lip has the highest number, there were 245 (34.4%) patients, followed by complete cleft palate, there were 162 (22.7%) patients. The rarest diagnosis was microform.

Table 2. Diagnosis

Diagnosis			**Patients**	**% (n = 713)**
Cleft lip	Unilateral	Sinistra	245	34.4 %
		Dextra	94	13.2 %
	Bilateral		79	11 %
	Microform		0	0 %
	N/A		73	10.2 %
Cleft Palate	Complete		162	22.7 %
	Incomplete		46	6.4 %
	N/A		14	1.9 %

685 were primary surgeries, 28 secondary surgeries among the primary surgeries, lip repair has the highest numbers 71.6% (491/685), followed by palate repair 27.2% (187/685), and alveolar bone grafting 1% (7/685). The most widely used surgical techniques in lip surgery was the Millard 50% (345/685), followed by the Forked Flap 11.5% (79/685), and the Straight Line Repair 9.7% (67/685), while the most widely used surgical technique in palate surgery was the Bardach technique (2 Flap Palatoplasty) 22.9% (157/685), followed by the Local Palatal Flap 4.2% (29/685), and Bucal Flap 0.1% (1/685). Among secondary surgeries, lip revision with Millard technique was the highest (82.1%), followed by scar revision (Z Plasty, Contracture Release, Columella lengthening) 3.57% each, fistula repair (7.1%).

Table 3. Procedure

Primary Surgery		**Patients**	**%(n=685)**
Lip Repair	Millard	345	50 %
	Forked Flap	79	11.5 %
	Straight Line Repair	67	9.7 %
Palate Repair	Bardach (2 Flap Palatoplasty	157	22.9 %
	Local Palatal Flap	29	4.2 %
	Bucal Flap	1	0.1 %
Alveolar Bone Graft		7	1 %

Secondary Surgery		**Patients**	**% (n=28)**
Lip Revision	Millard	23	82.1 %
	Z Plasty	1	3.57 %
	Contracture Release	1	3.57 %
	Columella lengthening	1	3.57 %
Palate Revision	Fistula Repair	2	7.1 %

DISCUSSION

The aim of this research was to evaluate range of social services of Hospital Social Responsibility (HSR) Gatot Soebroto Indonesia Central Army Hospital to cleft lip and palate patients in some are in Indonesia, and to get overview of epidemiologic profile of cleft lip and palate patient and to improve the services itself.

Hospital Social Responsibility (HSR) Services in Gatot Soebroto Central Army Hospital collaborated with Smile Train organization to perform routine surgeries for cleft lip and palate patient in several regions in Indonesia. Form Fig.1, the Number of HSR Cleft Lip and Palate Patients varies each years. The highest number was in 2015, which 243 patients. Every year the number of patients who underwent surgery from 2015-2019 has decreased. The number of patients is depended on the publication, location, target, timing, funding of the social services itself.

Form table 1, we can see the characteristics of social service patient cleft lip and palate. Most of them came from Java Island, maybe it caused by the located of RSPAD Gatot Soebroto in Jakarta, Java Island, so the range of social services focused in Java Island first, then expanded over Java Island to Sulawesi, Kalimantan, Papua, and Sumatra.

Cleft lip and palate patients are more likely to be male than female, according to epidemiological reports, with a 2:1 male-to-female gender predominance for CL/P versus a 1:2 male-to-female gender predominance for isolated cleft palate.[1]. Based on our database males patient were more dominant than female, but due to inadequate data that clearly describes the affected site of the cleft, make it difficult for us to make gender comparison in each diagnoses.

In table 2, we can see the percentage of cleft lip and palate diagnoses that have been treated by doctors who joined HSR services. Left unilateral cleft lip is the most common diagnoses. Morphologically, left unilateral clefts are the most common, accompanied by right unilateral clefts and bilateral cleft, with a 6:3:1 ratio. The left palatine process attains a horizontal position after the right palatine process during embryogenesis, resulting in a higher frequency of left unilateral cleft palates.[1]

Numbers of primary cleft surgery is higher than secondary surgery, with 685 procedures in total. The high number of primary surgery indicates that there are still many cleft lip and palate patients who have not reached sufficient facility for cleft surgery, therefore most of the patient came to our social services for primary surgery . Lip repair with Millard technique is the most common technique that used by the operators. As for palate repair, the most common technique that used by operators is two-flap palatolasty. Millard's rotation-advancement flap is the most commonly used cleft lip repair technique today. It produces minimal tissue loss, creates a suture line compatible with the philtrum on the side of the cleft, protects the Cupid's bow, repositions the base of the nasal ala and provides tension to minimize nasal flare, guides the construction of a nasal sill. The technique's durability is also dependent on the surgeon's skill and experience. [5]

Patients with lip repair range in age from 3 months to 60 years old, with a median age of 1 years, while palate repair patients' age range from 7 months to 26 years old, with median age of 4 years . The optimal timing for surgical repair depends on the surgeon's choice, anesthetic risk, comorbid congenital anomalies, and the family's perceived psychological effect. Around 10–12 weeks of age, most surgeons repair the cleft lip and palate repair at 6 to 18 months of age. The rule of tens still applicable.[2] From the data above describe that the average patients didn't get optimal timing for primary lip and palate surgery.

Low socioeconomic status, lack of awareness and the distance to the nearest cleft centers might be the factors which delayed patients in receiving medical information and treatment for cleft lip and/or palate.

CONCLUSION

Hospital Social Responsibility (HSR) Service in Gatot Soebroto Central Army Hospital is greatly helped by the collaboration with the Smile Train Organization in handling routine surgeries for cleft lip and palate patient in several regions in Indonesia. It can be seen that from 2015-2019 there were 713 patients who underwent primary or secondary surgery of cleft lip and palate. Most of patient came from Java Island. We hope that HSR in Gatot Soebroto Central Army Hospital can help to minimize the number of cleft cases in Indonesia, especially on the island of Java.

Based on database of Smile Train HSR Cleft Center, our research was close to those of other research, which found that unilateral cleft lip and palate was the most common diagnosis, male patients were more dominant than female. The average our patients didn't get optimal timing for primary lip and palate surgery because some factors which delayed patients in receiving medical treatments. Incomplete diagnostic data and clinical photos of patients make it

difficult to determine the complete diagnose of cleft lip and palate in our research. Further research, in larger numbers, on larger scales, and more complete data, is required for better description of the epidemiology of cleft lip and palate in Indonesia.

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