

Treatment Outcome of 4 to 7 Years-Old Patients with Cleft Lip and Cleft Palate in Tawanchai Center, Srinagarind Hospital: Trend of Treatment

Chantachume V, BSc¹, Songsung C, BSc¹, Pradubwong S, MSN², Chowchuen B, MD, MBA³

¹ Department of Medical Records and Statistics, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

² Division of Nursing, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

³ Plastic & Reconstructive Unit, Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Background: The highest incidences of cleft lip and cleft palate are in the Northeast

Objective: To study the trend and to compare the number of patients with cleft lip and cleft palate receiving treatment at Tawanchai Center, Srinagarind Hospital.

Materials and Methods: It was a descriptive study from the medical records of the patients admitted to Tawanchai Center between the ages of 4 to 7 years from 2009 to 2011. The research instrument was a questionnaire on general information and hometown. Percentage was employed for data analysis.

Results: It was found that there were 125 patients with cleft lip and cleft palate, 81 of them were males (64.8%). According to demographic study, most of the patients or 25 of them (20%) lived in Roi Et, followed by Loei and Sakon Nakhon with 13 patients each (10.4%), and 11 patients lived in Khon Kaen (8%). Regarding hometown areas, it was found that 106 patients (84.8%) lived outside the city or Muang districts. On the contrary, 19 patients (15.2%) lived in Muang districts. With regard to Health Area, the study revealed that 60 patients (48.8%) lived in Health Area 8, followed by 51 patients (41.5%) in Health Area 7.

Conclusion: According to the study of the treatment of 125 patients with cleft lip and cleft palate between the ages of 4 to 7 years, the number of the patients tended to decline but likely increase in hometown areas, especially outside of Muang districts. In addition, the number of patients living outside Health Area 7 was likely to increase. Therefore, providing information on the rights of treatment to the patients, families, and general people, will allow more patients to access specialized care centers.

Keywords: Cleft Lip and Cleft Palate, Tawanchai Center, Srinagarind Hospital, Trend of Treatment

J Med Assoc Thai 2019;102(Suppl5): 88-92

Website: <http://www.jmatonline.com>

The situation of cleft lip and cleft palate (CLP) is the most common congenital malformation of newborn disorders. The incidence rate of the illness is generally at 0.30 to 2.65 per 1,000 newborns⁽¹⁾ in Thailand. In the Northeast, the incidence is as high as 2.49 per 1,000 newborns or about 745 cases per year⁽²⁾ which is the highest incidence of CLP in Thailand. According to this situation, it is necessary to treat the patients holistically in relation to their age range through multidisciplinary teams in order to correct oral and facial problems and rehabilitate all parts to function normally.

There are 13 areas under the responsibility of National Health Security Office (NHSO) to care for all patients, including those with CLP in Thailand in order to focus on justice and reduce health disparities both within and between the health areas by focusing on issues related to

health according to the concept "Health in All Policies"⁽³⁾. The Northeast is in charge of Areas 7 to 10.

At present, Srinagarind Hospital is a tertiary-leveled hospital and is reliable in treatments, modern medical equipment, the readiness of medical personnel, (thanks especially to the Tawanchai Center which is the specialized center of excellence in treating) and operating and restoring CLP by an interdisciplinary team. Therefore, the treatment for patients with CLP, the patients' hometowns, and effects of travel distance were used as a guideline for planning the treatment and maximizing benefits for patients and medical institutions.

Objective

To study the trend and to compare the number of patients with CLP receiving treatment at Tawanchai Center, Srinagarind Hospital.

Materials and Methods

It was a descriptive study from the medical records of patients with CLP between the ages of 4 to 7 years admitted

Correspondence to:

Chowchuen B, Plastic & Reconstructive Unit, Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.

Phone: +66-43-363123, **Fax:** +66-43-202558

E-mail: bowcho@kku.ac.th

How to cite this article: Chantachume V, Songsung C, Pradubwong S, Chowchuen B. Treatment Outcome of 4 to 7 Years-Old Patients with Cleft Lip and Cleft Palate in Tawanchai Center, Srinagarind Hospital: Trend of Treatment. J Med Assoc Thai 2019;102;Suppl5: 88-92.

in Tawanchai Center, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. After research ethics on humans was approved from Khon Kaen University (HE601414), the data from 2009 to 2011 was collected including general information and hometown. Mean, percentage, and standard deviation were employed for data analysis.

Results

Regarding general information, it revealed that out of 125 patients, there were 81 males (64.8%). The patients were mostly domiciled in Roi Et Province, with a total of 25 people (20.0%), followed by Loei province and Sakon Nakhon Province, with 13 patients each (10.4 percent) and Khon Kaen with 11 patients (8.8%). When categorized by hometown areas, it was found there were 106 patients (84.8%) living outside cities or Muang districts, whereas 19 patients lived in Muang district (15.2%). Concerning Health Areas, 60 patients (48.8%) living in Health Area 8 were admitted, followed by 51 patients (41.5%) living in Health Area 7. With regard to genders, it was discovered that 81 cases were male patients (64.8%).

When comparing the number of the patients in all 3 years, it was found that the number of patients who received the treatment decreased. When comparing between provinces, it showed that the patients were mostly domiciled in Roi Et Province, with a total of 25 people (20.0%), followed by Loei and Sakon Nakhon Province with 13 cases each (10.4%) and Khon Kaen 11 cases (8.8%) (Table 1).

When comparing the distribution of the patients in districts and provinces, it was found that Roi Et had the highest number of patients (25 cases), which were distributed

across almost every district. Nongpok, Poechai, and Ponthong had 3 patients each (12%). Muang, Patumrat, Srisomdej, Ardsamad, Muang Saluang, and Selaphum had 2 patients each (8%). The provinces had the second highest number of patients were Sakon Nakhon and Loei, both of which had 13 cases each. Regarding the distribution of the patients in districts in these provinces, Sawang Daengdin and Pakchom had 3 patients each (23.1%) (Table 2). With regard to Health Areas, Health Area 8 had the highest number of cases at 60 (48.8%), followed by Health Area 7, which admitted 51 patients (41.5%) in shown Figure 1.

Discussion

According to the results of the study on the trend of the number of patients with CLP, based on the data collected from 125 patients between the ages of 4 to 7 years admitted in Tawanchai Center, Srinagarind Hospital from 2009 to 2011, it can be shown that the number of admitted patients tended to decline. In contrast, Rampan Patranit et al⁽⁵⁾ studied the statistics of patients with cleft lip and cleft palate admitted in Srinagarind Hospital from 1984 to 2007 and found that patients were more likely to receive treatment and undergo surgery according to age range.

This could be caused by communication technology development and convenient transportation routes along with the government's healthcare policy that has increased public health personnel, especially the number of specialists in surgery⁽⁷⁾. Patients can now conveniently access the treatment. In addition, Ministry of Public Health policies have encouraged patients to receive treatments with potential hospitals or specialized care centers for patients with cleft lip and cleft palate. Moreover, the trends of later marriage⁽⁸⁾

Table 1. Comparison of the patients on number of the patients, categorized in provinces, years, and treatment areas

| Provinces | 2009 | 2010 | 2011 | Number | Percentage |
|-----------------|------|------|------|--------|------------|
| Roi Et | 12 | 9 | 4 | 25 | 20 |
| Sakon Nakhon | 3 | 3 | 7 | 13 | 10.4 |
| Loei | 3 | 4 | 6 | 13 | 10.4 |
| Khon Kaen | 6 | 4 | 1 | 11 | 8.8 |
| Maharakham | 2 | 5 | 3 | 10 | 8 |
| Nong Bua Lamphu | 3 | 3 | 3 | 9 | 7.2 |
| Udonthani | 5 | 3 | 1 | 9 | 7.2 |
| Nakhon Panom | 4 | 1 | 1 | 6 | 4.8 |
| Nong Khai | 2 | 3 | 1 | 6 | 4.8 |
| Kalasin | 4 | - | 1 | 5 | 4 |
| Bueng Kan | 1 | 2 | 1 | 4 | 3.2 |
| Surin | 3 | - | - | 3 | 2.4 |
| Chaiyaphum | 2 | - | - | 2 | 1.6 |
| Buriram | - | 2 | - | 2 | 1.6 |
| Mukdahan | - | 1 | 1 | 2 | 1.6 |
| Yasothon | - | 2 | - | 2 | 1.6 |
| Sisaket | - | - | 1 | 1 | 0.8 |
| Other regions* | 1 | 1 | - | 2 | 1.6 |
| Total | 51 | 43 | 31 | 125 | 100.0 |

Other regions: Chonburi 1, Samut Prakan 1

Table 2. Comparison on number and percent of the patients in each province, categorized in treatment areas, provinces, and districts

| | Number | Percent |
|---|--------|---------|
| Health area 7 | | |
| Roi Et (n = 25) | | |
| Nongpok, Poechai, Ponthong | 3 | 12.0 |
| Muang, Patumrat, Srisomdej, Ardsamad, Muang Saluang, Selaphum | 2 | 8.0 |
| Thingkaoluang, Chaturapakpiman, Thawat Buri, Ponsai | 1 | 4.0 |
| Khon Kaen (n = 11) | | |
| Muang Khon Kaen | 5 | 45.5 |
| Kokpochai, Chonabot, Nampong, Puwieng, Manchakiree, Ubonrat | 1 | 9.1 |
| Maharakham (n = 10) | | |
| Muang Maharakham | 3 | 30.0 |
| Nachiek, Kosumpisai | 2 | 20.0 |
| Kudrang, Payakpumpisai, Wapiatum | 1 | 10.0 |
| Kalasin (n = 5) | | |
| Kamalasai, Naku | 2 | 40.0 |
| Kaowong | 1 | 20.0 |
| Total | 51 | 41.5 |
| Health area 8 | Number | Percent |
| Loei (n = 13) | | |
| Pakchom | 3 | 23.1 |
| Muang Loei, Phukradung, Chiangkan | 2 | 15.4 |
| Erawan, Dansai, Pakao, Wangsapung | 1 | 7.7 |
| Sakon Nakhon (n = 13) | | |
| Sawang Daengdin | 3 | 23.1 |
| Muang Sakon Nakhon, Kusumal, Wanonnias | 2 | 15.4 |
| Wananikon, Pangkon, Phupan, Koksrisupan | 1 | 7.7 |
| Nong Bua Lamphu (n = 9) | | |
| Nonsang | 5 | 55.6 |
| Sribunrueng | 2 | 22.2 |
| Muang Nong Bua Lamphu, Suwankuha | 1 | 11.1 |
| Undonthani (n = 9) | | |
| Kumpawapi, Bandung, Pen | 2 | 22.2 |
| Nongwuaso, Nonghan, Nonsa-ad | 1 | 11.1 |
| Nong Khai (n = 6) | | |
| Tabo | 2 | 33.3 |
| Muang Nong Khai, Ratanawapi, Phaorai, Ponpisai | 1 | 16.7 |
| Nakhon Panom (n = 6) | | |
| Nakae, Srisongkam | 2 | 33.3 |
| Nakhon Panom, Nawa | 1 | 16.7 |
| Bueng Kan (n = 4) | | |
| Buengkonglong, Bungkla, Pornchareon, Seka | 1 | 25.0 |
| Total | 60 | 48.8 |
| Health area 9 | Number | Percent |
| Surin (n = 3) | | |
| Muang Surin, Tatum, Sangka | 1 | 33.3 |
| Chaiyaphum (n = 2) | | |
| Konsawan, Saset Somboon | 1 | 50.0 |
| Buriram (n = 2) | | |
| Krasang, Banmai Chaiyapoj | 1 | 50.0 |
| Total | 7 | 5.7 |
| Health area 10 | Number | Percent |
| Mukdahan (n = 2) | | |
| Kansa-e, Wanyai | 1 | 50.0 |
| Yasothon (n = 2) | | |
| Kamkienkaew, Mahachanachai | 1 | 50.0 |
| Srisaket (n = 1) | | |
| Rasrisalai | 1 | 100.0 |
| Total | 5 | 4.1 |

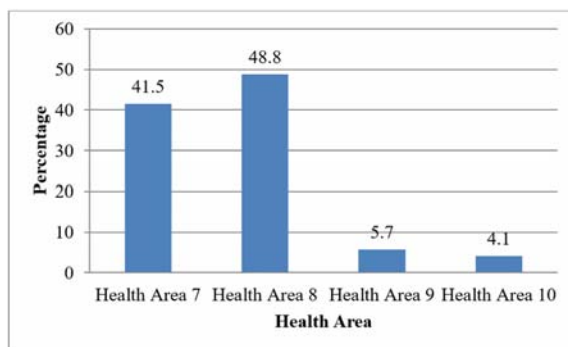


Figure. 1 Percentage of patients classified by health area zone.

and people having less children have contributed to the decline in the birth rate⁽¹⁰⁾. Furthermore, the information and knowledge on malformation prevention including the condition of CLP⁽⁹⁾ is more easily accessible, contributing to a lower number of patients with CLP.

Regarding the distribution of the patients in their hometowns based on Health Areas, it was found that Health Area 7 consisting of Kalasin, Khon Kaen, Mahasarakham, and Roi Et, all of which have hospitals over tertiary level and also have centers of excellence in caring for patients with CLP. The number of patients, therefore, is mostly distributed in Muang districts in association with the study of Kaewchai Tepsuthamarat, et al⁽⁶⁾. It stated that according to the distribution of patients with congenital malformation on the face and skull receiving treatment at Srinagarind Hospital in the fiscal years between 2005 to 2014, it revealed that most patients lived in Muang districts, especially in downtowns because they were convenient to access medical services. It is noticeable that number of patients living in Health Area 8 consisting of Bueng Kan, Loei, Nong Khai, Nong Bua Lamphu, Udonthani, Nakhon Panom, and Sakon Nakhon increased despite having hospitals at the tertiary level. It was also found that the patients' hometowns were mostly distributed across various districts.

Conclusion

According to the treatment of 125 patients with CLP at between the ages of 4 to 7 years, the number of the patients tended to decline despite more distribution in their hometowns in different districts apart from Muang district.

It was also found that the number of the patients living outside Health Area 7 is likely to increase. Therefore, the information on the rights of treatment for the patients, families and general people can help more patients access specialized care centers.

Acknowledgements

The researcher is indebted to all the executives who allowed the researcher to collect data and thanks the Center of Cleft Lip-Cleft Palate and Craniofacial Deformities,

Khon Kaen University under Tawanchai Royal Grant Project (Tawanchai Center)'s officials who assisted in data collection. The researcher's appreciation goes to the research center for patients with cleft lip and cleft palate which supports this study and its publication.

What is already known on this topic?

The ratio of patients with cleft lip and cleft palate admitted in Tawanchai Center, Srinagarind Hospital is somewhat lower when compared to the number of patients in the Northeast.

What is study adds?

This study indicated a greater number of patients living outside Muang district areas accessed the treatment based on the obviously wide distribution of the patients' hometowns in different districts apart from Muang districts. In addition, the number of patients living outside Health Area 7 is likely to rise.

Potential conflicts of interest

The authors declare no conflicts of interest.

Reference

1. Chowchuen B, Kiatchoosakun P. Guidebook of incidence, cause, prevention, cleft lip-cleft palate and craniofacial deformities. 2nd ed. Khon Kaen: Klungnana Printing Press; 2013.
2. Chowchuen B. Interdisciplinary care of cleft lip, cleft palate and craniofacial anomalies. Khon Kaen: Siriphan Offset Printing Factory; 2004.
3. Working Group to Develop a Model for Establishing a Health Zone for People. Form for establishing a health zone for people [Internet]. 2015 [cited 2019 Jan 6]. Available from: https://www.nationalhealth.or.th/sites/default/files/upload_files/60_01_15_8475.pdf.
4. Ratanasiri T, Junthathamrongwat N, Apiwantanakul S, Wongkam C, Chowchuen B. The birth incidence of cleft lip and palate at Srinagarind Hospital, 1990-1999. *Srinagarind Med J* 2001;16:S1-7.
5. Pattaranit R, Lekbunyasir O, Chantachum V, Songsung C, Pradubwong S. Study of in-patients' charge cost of the cleft lip and cleft palate patients aged 4-5 years old of Tawanchai Center, Srinagarind Hospital. *Srinagarind Med J* 2013;28:S23-9.
6. Virarat P, Ritthagol W, Limpattamapane K. Epidemiologic study of oral cleft in Maharat Nakhon Ratchasima Hospital between 2005-2009. *J Thai Assoc Orthod* 2013;9:S3-13.
7. Strategic and Planning Division Office of the Permanent Secretary for Public Health. 20-year national strategic plan [Internet]. 2016 [cited 2019 Jan 6]. Available from: <https://waa.inter.nstda.or.th/stks/pub/2017/20171117-MinistryofPublicHealth.pdf>.
8. National Statistical Office. 4 Decades Marriage of Thai people [Internet]. 2009 [cited 2019 Jan 6]. Available from: <http://popcensus.nso.go.th/topic.php?cid=3>.

9. Isranews. Found a trend of slowing marriage there are many older children at high risk of congenital babies [Internet]. 2018 [cited 2019 Jan 6]. Available from: <https://www.isranews.org/thaireform-other-news/53912-geny.html>.
10. Population Projection Working Group of the Institute for Population and Social Research Mahidol University. Thai population in the future [Internet]. Bangkok: Mahidol University [cited 2019 Jan 6]. Available from: <http://www.ipsr.mahidol.ac.th/ipsr/annualconference/conferenceii/article/article02.htm>