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SULL FOR RESERFE	Original Research Paper	Plastic Surgery	
International S	CORRELATION OF FACIAL INJURY SEVERITY SCALE (FISS) WITH LENGTH OF AY, THE NEED FOR SURGERY AND THE INVOLVEMENT OF OTHER SPECIALISTS MAXILLOFACIAL TRAUMA PATIENTS AT H. ADAM MALIK GENERAL HOSPITAL MEDAN		
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ABSTRACT Backgr	round: Facial Injury Severity Severity Score (FISS) has been to be the severe of the severe severe the severe seve	en used to assess the severity of facial	

and injuries to other parts of the body have not evaluated. In this study, we want to know the relationship between FISS score as the clinical assessment of maxillofacial trauma with the length of stay, the need for surgery, and the involvement of other specialist fields.

Method: This research was conducted using analytical research through a retrospective approach by looking at the medical records of patients who suffered maxillofacial trauma at H. Adam Malik General Hospital Medan from June to August 2019.

Result : From a total of 43 patients included in the study, there were 22 mandibular fractures, with mandibular angulus (29.0%), parasymphysis (22.4%), and mandibular corpus (21.5%). Thirty subjects (69.8%) needed surgery, and fixation of the fracture and subjects without intervention were 13 (30.2%). Patients who needed surgical intervention, the average time needed for hospitalization was 10.98 + 7.72 days (p = 0.007). The most collaboration found with neurosurgeons specialists, 39.53% of subjects who performed the surgery. A total of 55.8% of surgeries performed by a single operator from the plastic surgery department. Relationship between the length of stay with FISS, obtained for FISS> 3 (OR 14.37) (p = 0.01), meaning that patients with FISS> 3 are likely to stay longer for 14 times. Subsequent results related to the need for surgery obtained significant results (OR = 8.26, p = 0.026). significant (p = 0.059).

Conclusion: A FISS score significantly affects the length of stay for a maxillofacial trauma patient. FISS score also affects the involvement of other specialists in maxillofacial trauma patients but not statistically significant.

KEYWORDS : Facial Fractures, Length of Stay, Surgery, Involvement of Other Specialists.

INTRODUCTION

For GBD 2013, injury was categorised into 26 mutually exclusive and collectively exhaustive external cause-of-injury categor- ies. For our morbidity analysis, each cause-of-injury category was further divided among 47 mutually exclusive nature-of-injury categories In Global Burden of Disease and Injury 2013, injury was categorised into 26 mutally exclusive and collectively exhaustive external cause-of-injury categories. Some injuries are trivial and unlikely to account for an important number of DALYs (eg, small bruises, scratches). An estimated 973 million people worldwide had traumatic injuries that required specialist health care. 21.7 million suffered various types of fractures, 4.8 million died, and around 50% suffered skull and facial injuries (Haagsma et al. 2016). Malara found that road traffic accidents remain among the main reasons of maxillofacial injuries following the traumas resulting from assaults and interpersonal violence. (Malara et al. 2006).

A study from Bagheri requested Facial Injury Severity Severity Score (FISS) has been used to assess the severity of facial injuries. FISS represented as a numerical value that matches the presentation of all facial damage, with higher scores reflecting greater severity. This score has been shown to produce a significant difference between the cost of care and the patient's FISS score. However, FISS scores as a useful predictor of length of stay and changes between FISS scores and injuries to other parts of the body have not evaluated (Bagheri et al 2006) prognostic value of the length of stay with the highest FISS value of 3 (mild trauma) (Rampisela et al. 2017). A study from Thorén observed that 25.2% of patients with facial trauma suffered injuries in other parts of the body, which require intervention by other specialties. They also stated that this percentage increased for patients who had more than one facial fracture, reinforcing the idea that a higher FISS score increased the likelihood of involvement with other specialties (Thoren et al. 2010). In line with Thorén's findings, a study by Aita found that the specialists often involved were Orthopedics and Neurosurgery (Aita et al. 2018). In contrast to the results of other studies, the research of Manalu in RSUP H. Adam Malik Medan did not find any correlation between FISS with the brain and cervical injuries (Manalu et al. 2018).

In this study, we want to desciption the relationship between FISS score as the clinical assessment of maxillofacial trauma with the length of stay, the need for surgery, and the involvement of other specialist fields

METHODS

This research was conducted using analytical research through a retrospective approach by looking at the medical records of patients who suffered maxillofacial trauma at H. Adam Malik General Hospital Medan from June to August 2019. Inclusion criteria: All trauma patients treated at H. Adam Malik General Hospital Medan. Exclusion Criteria: Incomplete medical record data, including the absence of data regarding patient characteristics (age, sex, etiology) and supporting examinations (X-ray), and Maxillofacial trauma that only occurs hematoma, excoriation and injury <5 cm.

Research at Prof. RSUP Dr. Kandau Manado, FISS, has a

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RESULT

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Forty-three samples included in the study, with a median age of study subjects was 25 years, with a variation of 3 to 51 years. The number of males is 93% more dominant. The Characteristic of sample in table 1.

Table 1. Characteristics of the sample	Table	1.Ch	aract	eristics	oft	he	sam	ole
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Characteristics	FISS > 3	FISS <u><</u> 3
Gender	19:0	21:3
(Male : Female)		
Age	21 (3 – 51)	26 (10-50)
Length of stay (n,%total)		
> 3 days	2 (4.7%)	13 (30.2%)
<u><</u> 3 dαys	17 (39.5%)	11 (25.6%)
Management (n,%total)		
Operated	9 (20.9%)	21 (48.8%)
Non Operated	10 (23.3%)	3 (7%)
Colaboration (n,%total)		
Multidisciplinary	5 (11,6%)	14 (32,6%)
Single	14 (32,6%)	10 (23.3%)

From a total, 67 facial fractures identified 43 patients included in the study. The other 24 not included due to PAPS reasons (Returning at Your Own Request). As in table 2, the most common fracture area occurred in the mandibular bone (32.9%), followed by Zygoma (18.9%), and Orbita (17.2%).

Tabel 2. Frequency of Facial Fracture

Jenis Fraktur	Amount (%)
Mandibula	22 (51.2%)
Frontal Bone	13 (30.2%)
Zygoma	11 (25.6%)
Maxillary Bone	7 (16.3%)
Le Fort I	4 (9.3%)
Le Fort II	4 (9.3%)
Orbita	3 (6.7%)
Nasal Bone	2 (4.7%)
Le Fort III	1 (2.3%)

There were 22 mandibular fractures, with mandibular angulus (29.0%) being the most frequent fracture area, followed by parasymphysis (22.4%), and mandibular corpus (21.5%)The FISS score does not indicate an abnormal distribution, with a median (Q1-Q3) 3.0(1.0-4.0). Furthermore, FISS > 3 set as the cutoff limit in the regression model.

Based on the need for surgery, the majority of 30 subjects (69.8%) needed surgery, and fixation of the fracture and subjects without intervention were 13 (30.2%). Based on statistics, patients who have a FISS score> 3 require significant surgery (p = 0.007).

Tabel 3 Test Results Analysis of Relationships Between Bivariate and Multivariate Variables

Research		FISS	Relation ¹
variable		> 3	
Length of Stay	10.98 <u>+</u> 7.72	p =	OR = 14.37 (1.91-
(> 3 day)	hari	0.004*	107.75), p = 0.01
Another Specialist	19 (kolaborasi)	p =	OR = 4.86 (0.9-25.1),
Collaboration	: 24 (mandiri)	0.044*	p =0.059
Need for Surgery	30 (intervensi) :	p =	OR = 8.26 (1.29-52.9)
	13 (konservatif)	0.007*	p=0.026

*Chi-Square

Regresi Logistic

Among patients who needed surgical intervention, the average time needed for hospitalization was 10.98 + 7.72 days (p = 0.007). Evaluating the results involvement other specialist, a significant relationship found with FISS> 3 (p = 0.044).

The most collaboration found with neurosurgeons specialists, 39.53% of subjects who performed the surgery. A total of 55.8% of surgeries was performed by a single operator from the plastic surgery department.

Based on the analysis of the relationship between the length of stay with FISS, obtained for FISS> 3 (OR 14.37) (p = 0.01), meaning that patients with FISS > 3 are likely to stay longer for 14 times. Subsequent results related to the need for surgery obtained significant results (OR = 8.26, p = 0.026). While the collaboration relationship with other specialists found that the results were not statistically significant (p = 0.059).

DISCUSSION

Facial Severity Severity Score (FISS), which has been used to assess the severity of facial injuries. This is represented as a numerical value that matches the presentation of all facial damage, with higher scores reflecting greater severity. This score has been shown to produce a significant difference between the cost of care and the patient's FISS score. However, FISS scores as an effective predictor of length of stay and changes between FISS scores and injuries to other parts of the body have not been evaluated (Bagheri et al 2006).

A study from Bangun in 2009 in Ciptomangunkusumo Hospital found that from FISS scoring system, they found that most of maxillofacial trauma in Cipto Mangunkusumo hospital in 2009 was mild trauma. This is probably due to the mechanism of trauma which was low velocity injury of motorcyclist (Bangun et al. 2012). A study from Ramalingam found that based on the results of his study, maxillofacial injury severity measured by MFISS and FISS scores are predictable indicators of the economic burden to the patients (Ramalingam 2015). Also a study from Zhang in 2006 found that there was correlation between the MFISS and the cost of treatment and days of stay in hospital. The newly established MFISS thus characterizes maxillofacial injury severity while reflecting the management costs and treatment complexity (Zhang et al. 2006).

In this study we found a statistically significant difference between FISS and hospital stay, where patients with FISS values > 3, 14 times more likely to be hospitalized for more than 3 days regardless of the need for other specialists. Aita et al obtained patients with a FISS score > 3 having 18 times the possibility of being treated for more than 3 days. It is important to emphasize that the length of stay in hospital also depends on several factors that may not be related to trauma such as operating room schedules in each hospital. Because facial trauma surgery is not always an emergency, in hospitals with limited operating rooms like ours it might be delayed. This is a fact that happened at the hospital. Some other things that can affect the length of stay such as comorbid diseases, DM, hypertension, cardio-vascular disease.

The results show that almost all patients with FISS scores greater than 3 require surgical intervention in the operating room. This discovery is very useful for communication between surgeons and hospital staff. FISS can also help in making decisions to the trauma center to which patients will be referred, as well as predicting the cost of care. Bagheri et al., When publishing this score in 2006, already showed an association between higher treatment costs and higher FISS, but did not show an association between FISS and the need for other surgeon interventions (Bagheri et al. 2006).

CONCLUSION

A FISS score > 3 significantly increases the length of stay for a maxillofacial trauma patient. A FISS score of > 3 increases the likelihood of surgery in maxillofacial trauma FISS score > 3 increases the involvement of other specialists in maxillofacial trauma patients but is not statistically significant.

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