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## Counseling on the Potency of Platelet Growth Factor in the Management of Ankle Sprain Trauma in Orthopedic Polyclinic Patients at YK Madira Hospital, Palembang, Indonesia

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### ABSTRACT

Growth factors are not only capable of triggering cell and tissue repair but also act as anti-inflammatory molecules, capable of inhibiting inflammatory processes triggered by trauma. However, currently, patients with ankle sprains are still reluctant to get this therapeutic modality, even though the potential for this new therapeutic modality is superior enough to accelerate trauma repair. This is because the patient is still not familiar with this therapeutic modality. This community service aims to increase the knowledge aspect of ankle sprain patients about the potential benefits and possible risks of using platelet growth factors through the counseling and education process for ankle sprain patients at YK Madira Hospital, Palembang, Indonesia. The implementation of community service is carried out through 3 stages of the implementation process, namely preparation, implementation, and evaluation. The target audience for this community service activity is outpatients at the orthopedic polyclinic at YK Madira Hospital, Palembang, Indonesia. There is an enhancement knowledge score for respondents after being given counseling about the potential of growth factor from platelets to treat an ankle sprain, with  $p < 0.05$ . The results of the study also showed that there was an increase in attitudes and behavior in choosing the modality of platelet growth factor therapy after the counseling process was carried out, with  $p < 0.05$ . Counseling activities are effective in improving the knowledge and behavior aspects of patients at YK Madira Hospital, Palembang, Indonesia, in choosing the modality of growth factor therapy from platelets for ankle sprains.

### 1. Introduction

Ankle injuries are the most common orthopedic traumas. Several studies show that the prevalence of ankle injuries is around 40-60% of total orthopedic injuries. Various conditions and activities are believed to play a role in the occurrence of ankle injuries. Various sports activities and activities can put too much pressure on the tendons and tissues in the ankle area. Excessive stress and strain trigger trauma to the ankle area. The trauma triggers a series of inflammatory processes, in which inflammation triggers a series of activation of various

proinflammatory cytokines. Activation of proinflammatory cytokines triggers a series of death receptor activations that lead to death activation of cells in the ankle tendons and tissues.<sup>1-4</sup>

Platelets are blood components that play a role in the process of tissue repair that has been injured or traumatized. Platelets trigger the repair of tissue damage, where the process is mediated by the presence of various growth factors in platelets. Growth factors are molecules that trigger the growth and repair of natural tissues produced by the body. Growth factors are not only capable of triggering cell and tissue

repair but also act as anti-inflammatory molecules, capable of inhibiting inflammatory processes triggered by trauma. However, currently, patients with ankle sprains are still reluctant to get this therapeutic modality, even though the potential for this new therapeutic modality is superior enough to accelerate trauma repair. This is because the patient is still not familiar with this therapeutic modality.<sup>5-10</sup> Therefore, this community service aims to increase the knowledge aspect of ankle sprain patients regarding the potential benefits and possible risks of using platelet growth factors through the counseling and education process for ankle sprain patients at YK Madira Hospital, Palembang, Indonesia.

## 2. Methods

The implementation of community service is carried out through 3 stages of the implementation process, namely preparation, implementation, and evaluation. The target audience for this community service activity is outpatients at the orthopedic polyclinic at YK Madira Hospital, Palembang, Indonesia. At the preparatory stage, materials and educational materials related to platelet growth factors for ankle sprains were prepared. Educational material is provided in the form of a flyer containing what platelet growth factor is, the potential of platelet growth factor for ankle sprains, various studies related to the utilization of platelet growth factor for ankle sprains, procedures for applying platelet growth factor for ankle sprains and side effects that may be encountered in modality applications. This. At the stage of implementing the counseling, it was carried out directly in the waiting room for outpatients at the orthopedic polyclinic at YK Madira Hospital, Palembang, Indonesia. Before the counseling process is carried out, outpatients are given flyers related to counseling materials. At the evaluation stage, an assessment process is carried out related to the respondent's knowledge before counseling is carried out and after the counseling process is carried out. Analysis of the evaluation result data was carried out univariate and bivariate using SPSS software.

Univariate analysis was performed to present the sociodemographic data distribution of the respondents. Meanwhile, bivariate analysis was conducted to find out the differences in the mean scores of respondents' knowledge before and after counseling.

## 3. Results and Discussion

Table 1 shows the characteristics of the respondents. The majority of respondents are between 31-50 years old. The majority of respondents were female. Education respondents, the majority of having higher education. The majority of respondents have jobs as entrepreneurs, and the majority of respondents came to the orthopedic polyclinic with complaints of fractures.

Table 2 shows a comparison of aspects of knowledge, attitudes, and behavior of respondents before and after counseling about the potential of platelet growth factors in overcoming ankle sprain disorders. Counseling activities seem to be able to increase respondents' knowledge about platelet growth factors for ankle sprains. There is an enhancement knowledge score for respondents after being given counseling about the potential of growth factor from platelets to treat an ankle sprain, with  $p < 0.05$ . The results of the study also showed that there was an increase in attitudes and behavior in choosing the modality of platelet growth factor therapy after the counseling process was carried out, with  $p < 0.05$ .

The results of the study show that communication is an important aspect of conveying messages to other individuals. Ineffective communication tends to cause misperceptions and even conflicts between individuals. Effective communication is believed to be able to help convey messages to individuals.<sup>11-13</sup> Messages that are conveyed properly will trigger an upgrade of individual knowledge so that it will greatly influence individual attitudes and behavior.<sup>14-17</sup> Various studies show that counseling is an effective educational method in increasing knowledge and shaping the attitudes and behavior of each individual.<sup>18,19</sup>

Table 1. Characteristics of respondents.

Variable	Frequency
Age	
21-30 years	23
31-40 years	34
41-50 years	35
> 50 years	8
Gender	
Male	33
Female	67
Education	
Primary school	21
Senior high school	28
College	51
Occupation	
Private	35
Civil servant	31
Student/college student	34
Health disorders	
Fracture	35
Ankle sprain	31
Osteoarthritis	32
Tumor	2

Table 2. Comparison of aspects of knowledge, attitudes, and behavior of respondents before and after counseling.

Variable	Before counseling (Mean±SD)	After counseling (Mean±SD)	p-value*
Average knowledge score (score 0-100)	22,2±2,4	88,7±6,2	0,001
The average score of attitudes and behaviors (score 0-100)	31,2±2,6	94,6±8,3	0,001

\*Dependent T-test, p<0,05.

#### 4. Conclusion

Counseling activities are effective in improving the knowledge and behavior aspects of patients at YK Madira Hospital, Palembang, Indonesia, in choosing the modality of growth factor therapy from platelets for ankle sprains.

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