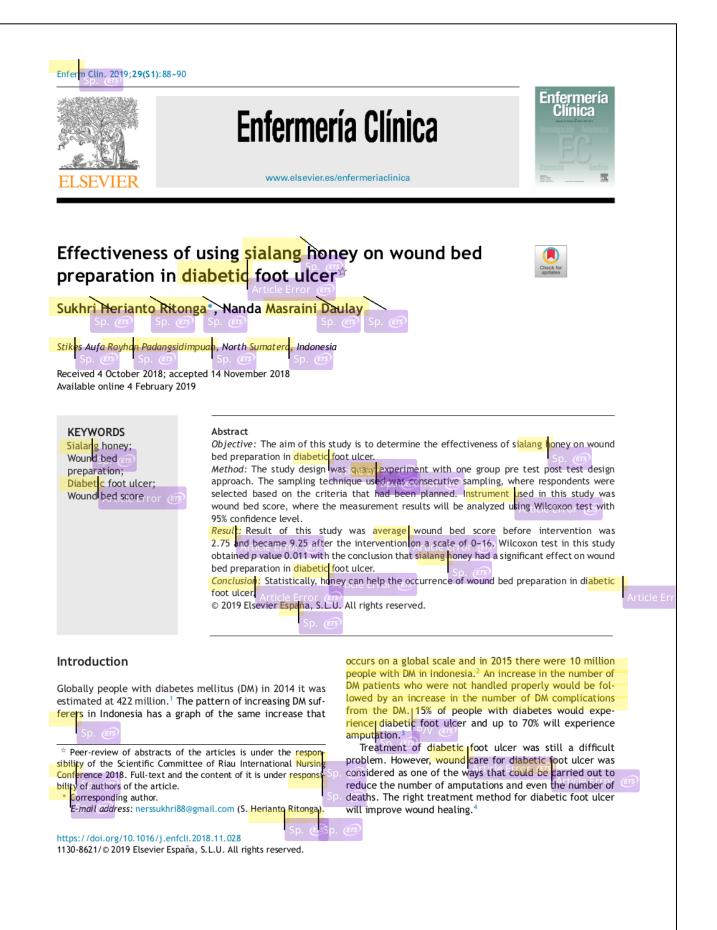
# Effectiveness of using sialang honey on wound bed preparation [] in diabetic foot ulcer

by nerssukhri88@gmail.com 1

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#### Effectiveness of using sialang honey on wound bed preparation

One of the wound care methods that could be used to improve wound healing is to maintain moisture at the base of the wound and prevent bacterial colonization. The wound care method was often known as the *moisture balance* method. *The moisture balance* method used dressings to maintain moisture in that the environment for wound healing could be maintained optimally.<sup>5</sup>

Honey is a natural liquid produced by honey bees from the flowers of plants or other parts of plants or the excretion of insects that have a sweet taste.<sup>6</sup> Honey is osmotic in that it contains almost 20% water. Honey properties like this can improve moisture balance in wounds and eventually can trigger *autolytic debridement* as one of the actions of *wound bed preparation*.<sup>7</sup>

### The aim of the research

To determine the effectiveness of sialant honey on *wound* bed preparation in clients with diabetic foot ulcer.

### Design of research

The design of research used was quasi-experimental approach one group pre test and post test design

#### Population and sample

The population in this study were all patients with diabetic foot ulcer in Padangsidimpuan City. The <u>sampling technique</u> used is <u>consecutive sampling</u> where all diabetic foot sufferers can become a research sample if they meet the existing criteria and their acquisition within the prescribed time limit.

#### Measurement method

This research used observation sheet wound bed score (Fig. 1).

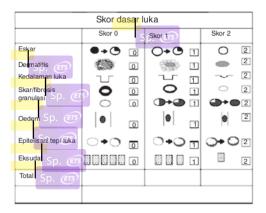


Figure 1 Wound bed score.

Table 1Distribution of research subjects according to the<br/>duration of the injury and day of treatment.

Univariate analysis	п	%
The duration suffered w	vound	
1 month	5	62.5
2 month	2	25.0
3 month	1	12.5
Day of treatment	n	%
The day 6	3	37.5
The day 8	1	12.5
The day 10	0	0.0
The day 12	2	25.0
The day 14	1	12.5
>The day-14	1	12.5
Total	8	100.0
	The duration suffered v 1 month 2 month 3 month Day of treatment The day 6 The day 8 The day 10 The day 12 The day 14 >The day-14	SpectralThe duration suffered wound1 month52 month23 month1Day of treatmentnnThe day 63The day 63The day 81The day 100The day 122The day 141>The day-141

Table	2	Distribution	of re	search	subjects	based or	n w <mark>ound</mark>
bed so	ores	s before and	after	interv	ention.		

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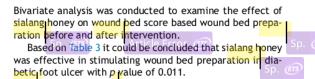
No.	Wound bed score	В	Before		After	
		n	%	n	%	
4	2	5	62.5	0	0.0	
et e	3	1	12.5	1	12.5	
3	4	1	12.5	0	0.0	
4	5	1	12.5	0	0.0	
5	6	0	0.0	-0-	0.0	
6	7	0	0.0	2	25.0	
7	8	0	0.0	0	0.0	
8	9	0	0.0	0	0.0	
9	10	0	0.0	2	25.0	
10	11	0	0.0	0	0.0	
11	12	0	0.0	2	25.0	
12	13	0	0.0	1	12.5	
Total		8	100.0	8	100.0	

#### The result

# Univariate analysis

The analysis results were displayed in the form of frequency distribution tables and percentages (Tables 1 and 2).

#### **Bivariate analysis**



Discussions

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Wound bed preparation would occur if the wound environment, was balanced. To make the environment in the



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S. Herianto Ritonga, N. Masraini Daulay

Table	3 The ef	fectivenes	s sialan	hor	ney to	ward <i>wound</i>
bed p	reparation	based on	wound	bed	score	respondent
( <i>n</i> = 8).						

No.	Wound bed score	Mean	SD	Significant
1	Before intervention	2.75	1.165	0.011
2	After intervention	9.25	3.370	

moisture wound balanced, in this study honey was used for being able to stimulate the occurrence of *wound bed* preparation.

Based on statistical tests it could be seen that honey could affect wound bed preparation. This was due to the content that honey has in that it could stimulate the wound bed preparation process Honey was good for wound care is honey containing less

Honey was good for wound care is honey containing less than 20% water and less than 80% of honey content is sugar.<sup>8,9</sup> The combination of water and sugar makes honey osmotic and can provide an environment with balanced moisture in the wound. The wound environment with the balance of moisture will stimulate the occurrence of wound bed preparation.<sup>8,9</sup>

Moisture balance triggers macrophages to produce collagenase and protease which were responsible for debridement through the separation and breakdown of proteins that keep dead tissue in the wound. When the protein was solved, the dead tissue would separate and debridement occurs. This process was also stimulated by neutrophils which would increase when the *debridement* process occurs.<sup>10</sup>/<sup>11</sup>

The success of honey therapy in maintaining moisture balance in the wound was affected by the use of the right dressing. This study combines honey as a topical therapy with gauze which functions as absorbance and transparent film which functions as an occlusive dressing. This method can retain moisture balance in the wound. This method was also good for preventing the seepage of honey out of the bandage in that honey was easy to melt when in contact with wounds that were warm.

This method was chosen based on a reflection of the research conducted by Evans and Mahoney in Evans and Mahoney's research, secondary dressing used was foam which had high absorbance properties, but in that of the high absorbance properties it resulted in reduced effectiveness of honey as a debridement agent. Honey which should be able to moisturize the wound base was absorbed first by the foam to reduce the effect of honey.

This was consistent with the statement of Sussman and Bates-Jensen that this wound bed preparation could be obtained through dressing that can retain moisture. This moist wound surface supports the rehydration of dead tissue and wound fluid consisting of white blood cells and this enzyme would break down necrotic tissue.<sup>12</sup> Therefore with a combination of honey, gauze and transparent the film not only provides moisture but can also retain moisture.<sup>15</sup>

# Conclusions

- The majority of respondents have suffered from diabetic foot ulcer for 1 month with a percentage of 62.5%.
- The day of treatment needed to remove dead tissue (wound bed preparation) starts from the 6th day. But there was one respondent who until the 14th day wound bed preparation has not happened well.
- After analyzing the data it could be concluded that sialang honey was effective in stimulating wound bed preparation in diabetic foot ulcer with a p value of 0.011.

#### Acknowledgements

The success and final outcome of this research required a lot of guidance and assistance from many people and I am extremely privileged to have got this all along the completion of our research.

I respect and thank to Ministry of Research, Technology and High Education for providing the an opportunity to do the research by through research grant programs.

respect and thankful to all client who are willing to be respondents in this study. S/V (III)

I am thankful to and fortunate enough to get constant encouragement, support and guidance from all members of this research which helped us in successfully completing our research work.

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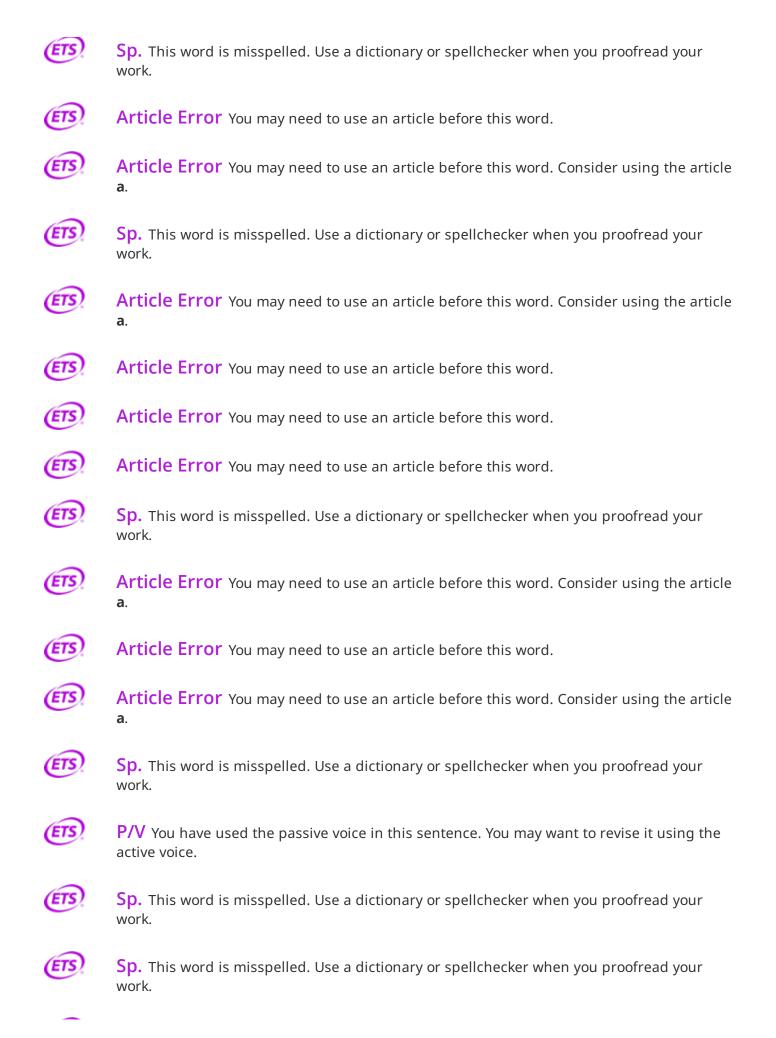
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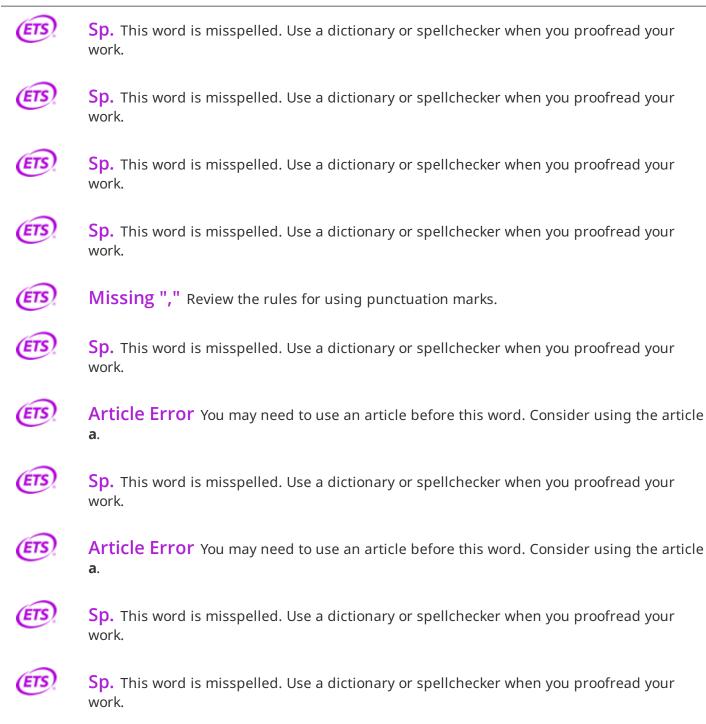


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