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Investigating the Effect of Beet Juice on Head Lice Treatment

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ABSTRACT

A significant number of patients refer to health centers suffer from lice disease. Despite the advances in public health, this disease has a high prevalence, especially in autumn and winter. There are many therapies in moderns and traditional medicine. Beet has a lot of therapeutic effects and it is mentioned that it has anti-lice effects on Iranian medicine sources. We studied the effect of beet juice in the treatment of head lice. This randomized clinical trial was conducted on 280 patientas with head lice. Patients were randomly divided into two groups: control (140) and intervention (140). Each patient was examined for three variables (lice, nits, and itchiness). Permethrin shampoo (1%) and beet juice were given to the control and intervention groups, respectively. After twenty-four hours, both groups were examined for lice, Nits, and itchiness. The satisfaction at the end of treatment was asked from both groups and was recorded in the questionnaire in terms of low, moderate and high satisfaction. After treatment, mean scores of lice were decreased in both groups, and this decrease was significantly higher in the control group than in the intervention group (p =0.001). But after treatment, the average frequency of nits was more frequent in the beet juice group and significant decrease was observed in beet juice (p=0.009). The mean itchiness score was not statistically significant in both groups before and after the intervention. (p> 0.05). It was found that satisfaction is more in intervention group than control group (p= 0.003). This study showed that beetroot water can be used to treat head lice. Although it is less effective than Permethrin in reducing lice, it is more effective in reducing the nits. Beetroot water can be offered to patients as an easy and uncomplicated way, even in pregnant mothers and infants, to manage this health problem through health centers. Since head lice are commonly found in family members, the control of the disease should be done in a massive way so that it can be effective. It seems that in terms of familial treatment, beet juice has a better capacity to reduce the burden of disease in the community than Permethrin.

Keywords: *Lice, Nits, Itchiness, Permethrin, Beet Juice, Iranian Medicine.*

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1. INTRODUCTION

Lice are external and permanent parasites of blood animals. They are very dedicated to the selection of the host, and each genus has a specific species of animals or birds as hosts, and without a host, they can survive for more than a few hours. Lice are classified according to food habits. Humans rarely and only accidentally invaded by rodent lice (Meister L., et al., 2016; Mazurek CM., et al., 2000). By contrast, three species of lice from the anupaurus order feed only on human blood. There are 100 million lice infestations around the world. Head lice are the most common type of infection, especially in the age group of 3 to 11 years. Since the 1970s, the incidence of head lice has increased in many countries, and in the United States, it is estimated that 6 to 12 million people per year are infected with this parasite. The transfer takes place through head to head, and classrooms are the most important place of transmission (Finlay J., et al., 2008; Mumcuoglu KY., 1999; Mumcuoglu KY., et al., 2004). There are many medications available that can be used for topical medications such as permethrin, lindane, malathion. Oral medicines such as ivermectin and cotrimoxazole are also used. The medicine that is distributed by the healthcare network is the dimethicone and permethrin shampoo (Sangaré AK, et al., 2016; Verma P., et al., 2015; Hansen RC., 2004). Resistance to permethrin has been reported. So, investigation of new alternative treatment is necessary. In between, plants and their derivatives can be considered as suiatble alternative method (Soonwera M., 2014). When a problem is common in the community, a variety of therapies are suggested. In this study, we made an easy and accessible treatment for the general public for the treatment of head lice. Considering Iranian medicine sources, we examined the effect of red beet juice on the treatment of this disease.

2. MATERIELS AND METHODS

This randomized clinical trial was conducted on 280 patientas with head lice. Patients were randomly divided into two groups: control (140) and intervention (140). Each patient was examined for three variables (having lice, groin, and itchiness). Permethrin shampoo (1%) and beet water were given to the control and intervention groups, respectively. Each patient in the control group received one Permethrin shampoo (1%). To the intervention group, a 200-cc beetroot was given to dry it all over the hair, so that all the hair was smeared with beetroot juice. An hour later, wash the head with normal water and do not use any other medication or other treatment until 24 hours. After twenty-four hours, both groups were examined for lice, Nits, and itchiness. The satisfaction rate at the end of treatment was asked from both groups and was recorded in the questionnaire in terms of low, moderate and high satisfaction.

3. RESULTS

In the present study, 280 people were enrolled and equally divided into two groups: intervention and control. Twenty (7.2%) of the subjects in both groups were male and 260 (92.8%) were female. There were no significant differences between the control and intervention groups (p= 0.35) Which indicates the lack of gender impact on the results in this study. The findings of the study showed that the mean score of lice in two groups was not significantly different before the study (p= 0.81). But after the intervention, the difference was significant between the mean score of lice between two groups (p=0.001) and in the control group, more decrease in the frequency of lice was observed. The findings of the study showed that the mean scores of nits were not significantly different in two groups before the study (p= 0.19). But in the post-intervention period, the difference between the mean scores of the two groups is significant (p= 0.009). In the intervention group, fewer abundances are seen. The mean itchiness score in the two groups before and after the intervention was not statistically significant (p> 0.05) (Table 1). The findings of the study showed that the average of the frequency of lice was significant in the control group before and after the intervention. The mean score of lice was significantly reduced after intervention (p<0.001). There was also a significant difference between the mean score of lice in the intervention group before and after the intervention (P<0.001). After intervention, the mean score of lice was decreased. The findings of the study showed that the mean of the frequency of Nits was significantly different in the control group before and after the intervention (p<0.001). After the intervention, the average frequency of Nits decreased. The results of the study showed that the mean score of the frequency of Nits was significant in the intervention group before and after the intervention (p<0.001). After the intervention, the average score of the frequency was decreased. The results of the study showed that the mean itchiness score was significant in the control group before and after the intervention (p<0.001). After the intervention, the mean itchiness score was decreased. The findings of the study showed that the mean itchiness score was significant in the intervention group before and after the intervention (p<0.001). After the intervention, the mean itchiness score was decreased (Table 2). The results of this study showed that there was a significant difference between the mean satisfaction score of intervention in the study groups (p = 0.003) and the mean score of satisfaction in the drinking water group was higher than the control group (Table 3).

4. DISCUSSION AND CONCLUSION

Lice are external and permanent parasites of blood animals. This parasite usually infests the scalps of school age children, but all persons, even adults, also get them. They are very dedicated to the selection of the host, and each genus has a specific species of animals or birds as hosts, and without a host, they can survive for more than a few hours (ohnson KP., et al., 2004; Reed DL., et al., 2007). There rae some agents for treatment of head lice such as Malathion, Permethrin, Lindane, Pyrethrins, etc. A new method for treatment of lice is herbal treatment. This treatment and aromatherapy are sometimes used to treat head lice (Dodd C., 2001; DiNapoli JB., et al., 1988; West DP., 2004). This study showed that beet juice in the treatment of head lice affected all three variables and reduces lice, scares and itching of the head. The effect on the variables is not similar. Between the three variables, it has a greater effect on the reduction of scares. The beet juice is more effective than Permethrin 1% in decreasing scares. Considering the greater impact of beetroot juice on reducing Nits, we can recommend that we use beet juice to reduce the risk of chronic diseases. Babies and Pregnant mothers can safely use this herbal product. People who have a lot of lice can be offered to use beetroot juice as a complementary treatment.

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Table 1. Comparison of lice, Nits, and itching between the study groups before and after the intervention

Varibles	Stage	Group	Mean	P value
Lice	Before	Control	0.79	0.81
		Intervention	0.77	
	After	Control	0.07	0.001
		Intervention	0.26	
Nits	Before	Control	1.82	0.19
		Intervention	1.76	
	After	Control	1.20	0.009
		Intervention	0.98	
itching	Before	Control	1.52	0.09
		Intervention	1.7	
	After	Control	0.5	0.77
		Intervention	0.53	

Table 2. Comparison of lice, Nits, and itching within groups before and after the intervention

Varibles	Group	Stage	Mean	P value
Lice	Control	Before	0.79	<0.001
		After	0.07	
	Intervention	Before	0.77	<0.001
		After	0.26	
Nits	Control	Before	1.82	<0.001
		After	1.20	
	Intervention	Before	1.76	<0.001
		After	0.98	
itching	Control	Before	1.52	<0.001
		After	0.5	
	Intervention	Before	1.7	<0.001
		After	0.53	
	Control		2.23	0.003
	Intervention		1.99	

Table3. Satisfaction of patients from receiving the intervention (treatment)

Group	Mean	P value
Control	0.72	0.003
Intervention	0.59	