Effect of Honey Supplementation on Gastrointestinal Complications in Children with Acute Lymphoblastic Leukemia

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Abstract

Objective

Materials & Methods

Summary

A follow up study included 40 children with ALL followed from December 2015 to December 2016 in Children's Hospital, Ain Shams University, oncology unit. Honey was randomly administered to half of the patients. Honey improves chemotherapy induced gastrointestinal complications. C.difficile infection was present in 8% of studied patients.

The aim of this study is to evaluate the effect of honey supplementation on frequency of gastrointestinal complications in pediatric patients with ALL undergoing chemotherapy.

Table 1. Comparison between studied groups regarding some GIT symptoms in follow up and total days of febrile neutropenia

		Group I	Group II	P-value
		No. = 25	No. = 15	
Diarrhea No of episodes	Median (IQR)	0 (0 – 0)	4 (4 – 4)	<0.00\
	Range	0 – 0	4 – 4	
Constipation No of episodes	Median (IQR)	0 (0 – 0)	1 (1 – 1)	<0.00\
	Range	0 – 0	1 – 1	
Abdominal pain No of episodes	Median (IQR)	0 (0 – 0)	1 (1 – 1)	<0.00\
	Range	0 – 0	1 – 2	
Vomiting No of episodes	Median (IQR)	0 (0 – 0)	3 (2 – 4)	<0.00\
	Range	0 – 0	2 – 4	
Total days of febrile neutropenia	Median (IQR)	10 (7 – 14)	30 (21 – 30)	0.001
	Range	4 – 21	14 – 30	

Table 2. Comparison between initial and follow up as regards vomiting, abdominal pain, constipation, , diarrhea in group I

		Group I		P-value
		Initial	Follow up	
Diarrhea No of episodes	Median (IQR)	3 (3 – 4)	0 (0 – 0)	0.001
	Range	2 – 6	0 – 0	
Constipation No of episodes	Median (IQR)	1 (1 – 1)	0 (0 – 0)	0.157
	Range	1 – 1	0 – 0	
Abdominal pain No of episodes	Median (IQR)	1 (1 – 2)	0 (0 – 0)	<0.00\
	Range	1 – 3	0 – 0	
Vomiting No of episodes	Median (IQR)	3 (3 – 4)	0 (0 – 0)	0.002
	Range	2 – 5	0 – 0	

Study included children with ALL on chemotherapy. All the studied patients were subjected to medical history and clinical examination, with special emphasis on oral mucositis and different gastrointestinal complications. Follow up was done for weight, height z score, gastrointestinal complications and any adverse events. Stool analysis, culture, Clostridium difficle toxin A, B by ELISA was done to all patients at baseline and repeated to patients receiving honey at week 4 of supplementation. Patients were randomized into two groups; group I (25 patients) who received honey(dose 2gm/kg 3 times daily for 1month) while group II (15 patients) who did not receive honey.

Table 3. Comparison between studied groups as regards oral mucositis according WHO

Oral mucositis		Patients receiving honey (No.=25)		Patients not receiving (No.=15)		P value
		No.	%	No.	%	
Initial	Grading 1	7	28.00%	6	40.00%	0.465
	Grading 2	3	12.00%	3	20.00%	
1 week	Grading 1	6	24.0%	6	40.0%	0.021
	Grading 2	0	0.0%	3	20.0%	
2 weeks	Grading 1	3	12.0%	3	20.0%	0.042
	Grading 2	0	0.0%	3	20.0%	
3 weeks	Grading 1	0	0.0%	3	20.0%	0.025
	Grading 2	0	0.0%	1	6.7%	
4 weeks	Grading 1	0	0.00%	3	20.00%	0.025
	Grading 2	0	0.00%	1	6.70%	

After honey supplementation a significant improvement in degree of oral mucositis in group 1(0.0%) as compared with group 2(26.70%) at weekly evaluation visit. There was significant decrease and improvement in consistency and frequency of diarrhea and abdominal colics in group 1(0.0%) compared with group 2(20.0%) p =. 02. A slight increase in weight among the supplemented group

Discussion

Honey may be added to all patients as an adjuvant treatment to chemotherapy to improve nutritional status and gastrointestinal complications in children with cancer

References

1. Abdulrhman MA, Hamed AA, Mohamed SA, Hassanen NA (2016) : Effect of honey on febrile neutropenia in children with acute lymphoblastic leukemia: A randomized crossover open-labeled study. Complement. Ther. Med., 25: 98–103.

Background

The treatment of cancer is associated with gastrointestinal complications and weight loss. Honey can fight microbial infection by its immuno-activating, anti-inflammatory and prebiotic activity.