



HAS THE NATURAL RAW HONEY ANY EFFECT ON HIV INFECTION?

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Abstract

Accepted Date:

05/08/2012

Publish Date:

27/10/2012

Keywords

HIV

Honey

CD4

CD8

CD25

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Honey stimulates B and T lymphocytes proliferation in cell cultures and is an old medicine in Middle East. CD4 has an important role in progression of HIV/ AIDS. The aim of this study was assessment of the natural honey on CD4 count in a 30 year-Old Iranian HIV positive man. In this study he treated with 80g natural honey every day for three months. The CD4 counted in day 0 and 30 days after consumption of honey. Results revealed that honey elevated CD4, CD8, platelet, lymphocyte, Neutrophil, RBC and WBC counts and hemoglobuline level in HIV positive patient. Also CD25 was decreased after consumption of honey. It seems that natural raw honey may improve the immune system function in HIV positive patients.

INTRODUCTION

Honey is one of the oldest known medicines that are highly valued in Middle East. It is used widely in Islamic culture for cure¹, since it is demonstrated that Holy QURAN (more than 1400 years ago) mentioned honey as a cure for all illnesses (And thy LORD taught the bee to build its cells in hills, on tree and in men's habitations, then to eat of all the produce of the earth and find with skill the spacious paths of its LORD, there issues from within their bodies a drink of varying colors, wherein is healing for men, verily in this is a sign for those who give thought. Surah Al-Nahl (The Bees), verse 69).

Honey is a natural source of antioxidants and it also contains vitamins, minerals, enzymes, acids and sugar²⁻⁴.

We know that there is a lot of self-medication worldwide⁵⁻⁷ and a great part of it is done by traditional medicine. Honey is used in traditional and Islamic medication as one of the most important and as a valuable remedy⁸.

Honey is used as a wound dressing⁹, it diminishes scar size, reduces inflammation,

edema, and exudation and stimulates tissue regeneration that promotes healing¹⁰⁻¹².

It is established that honey can enhance production of antibody against thymus dependent and thymus-independent antigens in primary and secondary immune responses¹³.

Also it has anti-bacterial, antifungal, anti-viral and some anti-parasite activities¹⁴⁻²⁰. Natural honey elevates nitric oxide (NO) and decreases prostaglandin levels in various biological fluids²¹. It stimulates B and T lymphocyte proliferation in cell culture and stimulates releasing cytokines from monocytes²²⁻²³.

The aim of this study was to find whether raw unprocessed honey could affect CD4 and CD8 count in a patient with HIV infection.

CASE REPORT

A 30-year-old Iranian gentleman infected by HIV for 4 years was studied. He had never received any treatment. He complained of tiredness and anorexia. Physical

examination revealed normal findings. The subject participated in a one month trial to study the effects of honey on hematological tests. Hematological investigations were performed and CD4 counts estimated after 12 hours of overnight fasting. The patient received a regular diet during the three months of study with daily consumption of 80 mg honey (Natural unprocessed light yellow Multifloral honey) after overnight fasting and half an hour before breakfast. After 1 month (in the day 30) CD4 and CD8 counts were evaluated.

Results revealed that CD4, CD8, RBC, WBC, Platelet, neutrophil and lymphocyte counts and CD4/CD8 increased after 30 days of honey intake, although that CD25 count decreased after honey consumption (Table 1). The life style and diet of patient didn't change in investigation period.

DISCUSSION

In our patient oral honey administration increased CD4, CD8 count up to (1%) in

about 30 days. It is in agreement with other researches that showed honey stimulates lymphocytes proliferation²². Although that the mechanism of antibody production is unknown but it may be due to this fact that honey increases salivary nitric oxide in humans²⁴. Nitric oxide is an important mediator in immune system²⁴ and inhibits replication of viruses^{21, 25}.

CD25 is expressed on activated T cells, so it represents an ideal marker for monitoring stages of virus latency and productive infection and some studies substantiate the importance of CD25 as a marker of productively HIV- infected cells. In our study the level of CD25 was decreased after honey intake.

We suggest other investigators to establish additional research with the large number of patients in order to show the effectiveness of natural honey on CD4 count in HIV positive patients.

Table 1

Effect on honey consumption (80 g/day) on CD4 and CD8 count in a HIV positive patient

Variable	Time after consumption	
	0	30 th day
CD4 (n)	664	872
CD8 (n)	1329	1516
CD4/CD8 (%)	0.50	0.58
CD25(n)	227	265
PLT(n)	146000	186000
HGB(g/dl)	16.1	16.9
WBC (n/ μ l)	7970	8520
RBC (n/ μ l)	5.29×10^6	5.55×10^6
Neutrophil (n/ μ l)	3990	3890
Lymphocyte (n/ μ l)	3020	3790

REFERENCES

1. Al-Waili N: Intrapulmonary administration of natural honey solution, hyperosmolar dextrose or hypoosmolar distill water to normal individuals and to patients with type-2 diabetes mellitus or hypertension: their effects on blood glucose level, plasma insulin and C-peptide, blood pressure and peaked expiratory flow rate. European journal of medical research. 2003; 8(7): 295.
2. Frankel S, Robinson G and Berenbaum M: Antioxidant capacity and correlated characteristics of 14 unifloral honeys. Journal of Apicultural Research. 1998; 37(1): 27-31.
3. Taormina PJ, Niemira BA and Beuchat LR: Inhibitory activity of honey against foodborne pathogens as influenced by the presence of hydrogen peroxide and level of

antioxidant power. International Journal of Food Microbiology. 2001; 69(3): 217-25.

4. Chepulis LM, Starkey NJ, Waas JR and Molan PC: The effects of long-term honey, sucrose or sugar-free diets on memory and anxiety in rats. Physiology & behavior. 2009; 97(3-4): 359-68.

5. Sarahroodi S, Arzi A, Sawalha A and Ashtarinezhad A: Antibiotics self-medication among southern iranian university students. International Journal of Pharmacology. 2010; 6(1): 48-52.

6. Sarahroodi S and Arzi A: Self-medication with antibiotics, is it a problem among Iranian College students in Tehran. J Biol Sci. 2009; 9: 829-32.

7. Sarahroodi S: Self-medication: Risks and Benefits. International Journal of Pharmacology. 2012; 8(1): 58-9.

8. Sarahroodi S: Traditional medicine. Teharan: Hayyan; 2006.

9. Molan P: A brief review of honey as a clinical dressing. Primary intention. 1998; 6(4): 148-58.

10. Molan PC: The role of honey in the management of wounds. 1999.

11. Molan PC: Why honey is effective as a medicine. 1. Its use in modern medicine. 1999.

12. Al-Waili N and Saloom K: Effects of topical honey on post-operative wound infections due to gram positive and gram negative bacteria following caesarean sections and hysterectomies. European journal of medical research. 1999 ;4(3): 126.

13. Al-Waili N: Effects of honey on the primary and secondary immune responses due to thymus dependent and thymus independent antigens. Hematol J. 2001; 1(Suppl 1): 161.

14. Molan PC: The antibacterial activity of honey: 1. The nature of the antibacterial activity. 2006.

15. Zeina B, Othman O, Al-Assad S: Effect of honey versus thyme on Rubella virus survival in vitro. The Journal of Alternative and Complementary Medicine. 1996; 2(3): 345-8.

16. Al-Waili N, Al-Alak J, Haq A, Shabani M and Akmal M: Effects of honey on gram positive and gram negative bacterial growth in vitro. FASEB J. 2001; 15: A586.

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17. Al-Waili N: Topical crude honey application for herpes simplex lesions. *FASEB J.* 2001; 15: A616.
18. Al-Waili N: Therapeutic and prophylactic effects of crude honey on chronic seborrheic dermatitis and dandruff. *European journal of medical research.* 2001; 6(7): 306.
19. Al-Waili N: Honey preparation with olive oil and natural wax to treat skin fungal infections. *FASEB J.* 1999; 13: A848.
20. Zeina B and Zohra BI: The effects of honey on Leishmania parasites: an in vitro study. *Tropical doctor.* 1997; 27: 36.
21. Al-Waili NS, Al-Waili TN, Al-Waili AN and Saloom KS: Influence of Natural Honey on Biochemical and Hematological Variables in AIDS: A case study. *TheScientificWorldJOURNAL.* 2006; 6: 1985-9.
22. Abuharfeil N, Al-Oran R and Abo-Shehada M: The effect of bee honey on the proliferative activity of human B-and T-lymphocytes and the activity of phagocytes. *Food and Agricultural Immunology.* 1999; 11(2): 169-77.
23. Tonks A, Cooper R, Jones K, Blair S, Parton J and Tonks A: Honey stimulates inflammatory cytokine production from monocytes. *Cytokine.* 2003; 21(5): 242-7.
24. Al-Waili NS, Haq A: Effect of honey on antibody production against thymus-dependent and thymus-independent antigens in primary and secondary immune responses. *Journal of medicinal food.* 2004; 7(4): 491-4.
25. Croen KD: Evidence for antiviral effect of nitric oxide. Inhibition of herpes simplex virus type 1 replication. *Journal of Clinical Investigation.* 1993; 91(6): 2446.