

Case Report

Traditional Probiotic (Kefir) Effects on Glycated Hemoglobin A Level and Weight of an Indexed Diabetic Patient

Abstract

Kefir (a traditional collection of beneficial microbes) is a popular accepted beverage that usually consumed for its health-promoting effects in Iran and Caucasian regions. In this case, the beneficial effects of a kind of kefir were reported on glycated hemoglobin A (HbA1c) level, and weight loss of an indexed diabetic mellitus patient. The patient as a supplement of her routine anti-diabetic drugs consumed Probiotic kefir. After 90 days of consumption the patient, have about 4 kg weight loss, and her HbA1c decreased from 7.9 to 7.1. Depth of sleep and energizing effects of kefir was also from very remarkable findings of this case, as reported by the patient.

Keywords: *Diabetes mellitus, glycated hemoglobin A, kefir grains, probiotics*

Introduction

Kefir is a collection of compatible yeasts and beneficial bacteria (probiotics) that have been used as a starter (grain forms similar to mushrooms as indicated in Figure 1) for making fermented milk (dough) or yogurt (kefir beverages) as a traditional beverage in Iranian and Caucasian regions from thousand years ago. In fact, fermented kefir products are full of proteins, beneficial bacteria, and could have high lipids based on the kind of milk have been used for its production. Usually, based on experiences, families using skimmed milk for optimum growth of microorganisms and producing an effective beverage.

Obesity and diabetes mellitus type 2 are from characteristics of metabolic syndrome which occur as a global pandemic with increasing prevalence in both developed and developing countries. In fact, there is not a definitive consensus on the inducing agents and, in turn, treatments of such diseases. Although genetic backgrounds are effective, environmental factors including socioeconomic situations, cultural and eating habits are considered as very important factors predisposing individuals to the so-called diseases. However, it seems like the role of probiotics or beneficial microorganisms are very critical among environmental factors.^[1] Recently, improving the effects of probiotics on

diabetes mellitus indexes including HbA1c, obesity, and plasma glucose level have been discussed in the literature. However, there are a number of agreeing^[2] and opposing studies.^[3] In this report, beneficial effects of kefir were explained on HbA1c and weight loss of diabetes mellitus patients.

Case Report

The patient was a 58-year-old woman who had uncontrolled diabetes mellitus from 15 years ago, although, sometimes she was referring to a general physician (GP), for disease control. With her oral consent, consumption of fermented yogurt (0.5 kg per day) was started as a supplement of routine therapy. In fact, we noticed a weight loss after a few weeks. However, after 3 months, her doctor evaluated the weight and HbA1c level. After this period, very interestingly, the weight of the patient decreased by about 4 kg (from 88 to 84 Kg), and the amount of HbA1c was decreased from 7.9 to 7.1.

Discussion

The therapeutic effects of probiotics and gut microflora on the different conditions of metabolic syndrome including overweight, obesity, chronic generalized inflammation, lipid, and glucose metabolism have been discussed in the literature.^[4]

The mentioned patient in this study did not have control over her disease and therefore,

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Figure 1: Traditional kefir a kind of probiotic microbes which have been used by Iranian and Caucasian Regions from ancient times

with her consent, the effect of kefir was assessed on the diabetes mellitus indexes. This was due to the fact that based on recently published literature and believes of peoples, kefir has beneficial effects on diabetes mellitus and many other metabolic diseases. The results are notable in decreasing weight loss and HbA1c level in the plasma which certainly needs to be studied comprehensively by researchers as a therapeutic potential for diabetes. Another result of this report was the effect of using local probiotics on the depth of the patient's sleep, which was found inadvertently during the study.

The effects of probiotics on HbA1c and weight loss was discussed and confirmed in a meta-analysis of different randomized clinical trials (RCT) studies.^[5] This results are in accordance and similar with other studies in which in addition of HbA1c and weight loss, the effects of beneficial probiotics have been studied on the other factors including fasting blood glucose, triglyceride, total cholesterol, HDL-C, LDL-C, glycemic control, decreasing of inflammatory cytokines (TNF- α and resistin), increasing of the acetic acid, and cardiovascular biomarkers.^[6-8]

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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