

# How popular are folk remedies with Korean diabetic patients?

Dok young YOON, Jung Hwa KWON, Young Me LEE, Youn Seon CHOI and Myung Ho HONG

*Department of Family Medicine, College of Medicine, Korea University, Seoul, Korea*

## Abstract

**Aim:** Many patients in Korea are thought to use diabetic folk remedies, but few studies exist to demonstrate this. The aims of this study were to: (i) investigate the existing situation of folk medicine use in Korea; and (ii) to analyze the factors related with its use and the intention for the future use of folk remedies.

**Methods:** A total of 153 type II diabetic patients who visited a public health center and university level hospital were surveyed via interviews. The questionnaire asked about social and demographic background, duration and treatment method of diabetes, kind and duration of folk remedies, expenditure for folk remedies, duration, their belief on efficacy and their intention for the future use of folk remedies.

**Results:** The mean age of participants was 59.6-years-old and average duration of diabetes was 5.4 years. A total of 40.5% of patients had used folk remedies. The common folk remedies were silkworm 20%, barley 13.7% and unpolished rice 10%. A total of 58.1% of patients who used folk remedies were recommended to it by their relatives and friends and 21.0% of patients were recommended by other diabetic patients. A total of 74.2% of participants were not satisfied with the effect of folk remedies. Participants without experience in using folk remedies (36.3%) were more likely to say that they will not use them than those who had experienced it (14.5%,  $p < 0.05$ ).

**Conclusions:** Folk remedies are relatively widely used among Korean diabetic patients. Although most of the diabetes patients who have experienced the use of folk remedies were not satisfied with their effects, primary physicians should realize that there is a preference for folk remedies in some diabetic patients for their use.

© 2002 Blackwell Science Asia

**Key words:** diabetes mellitus, folk remedies, traditional medicine.

## Introduction

Diabetes mellitus is a controllable or a manageable disease rather than a curable disease. It is, therefore, not surprising that some patients may search for, and use alternative treatments or traditional remedies.

Studies of some traditional medicine or their components have suggested an effect on type II diabetes mellitus, in various countries. Aloe vera leaves<sup>1,2</sup>, coriander,<sup>3</sup> chard,<sup>4</sup> guava juice<sup>5</sup> and some oriental remedies such as Tang Shen Ning<sup>6</sup> and Jiawei Shenqi Dihuang<sup>7</sup> are such examples. However, most folk

remedies are yet to be proven scientifically effective and safe.<sup>8,9</sup> Some folk remedies such as lupine seeds have proven to have serious side-effects.<sup>10,11</sup> In addition to this, scientifically unproven measures to treat diabetes may lead to a life-threatening event.<sup>12</sup>

Because Korea has a long history of herbal medicine use to treat not only diabetes, but also various kinds of diseases, traditional or folk remedy usage seems acceptable to Korean people. As a chronic disease, diabetes is also more likely to attract the use of complementary and traditional alternatives. It has been reported in the USA that up to 40% of the population with a chronic disease use complementary or alternative medicine either in a traditional or natural preparation.<sup>13</sup> In spite of these studies, detailing the use of folk remedies for diabetes is rare. Therefore, we have initiated this study to investigate the existing situation

Correspondence: Myung Ho Hong, FM Department, Korea University, Kuro Hospital, Kurodong, Kurogu, Seoul, Korea. Email: mhongmd@unitel.co.kr

Accepted for publication 19 September 2001.

of folk medicine use for diabetes in Korea and to analyze the factors related to their use.

## Methods

### Sample

The subjects of this study were outpatients who visited either a public health center or a family medicine department in a university level hospital. Both of these centres are located in an urban area of Seoul, which is the capital of Korea. The survey was done during the period from June 1 to July 30 in 1998. Because our main interest was in the middle-aged or older type II diabetics, the patients were limited to those who had type II diabetes mellitus and were over 40 years. They were requested to participate in the study after normal consultations. All interviews were performed by two family physicians.

### Study design

This was a descriptive, cross-sectional study based on a questionnaire format. An interview was conducted with each participant by either of the researchers. A standard interview format was used with each patient using the questionnaire.

The questionnaire consisted of 18 questions which included details about:

- the socioeconomic factors of the patient, which included the patients' age, sex, educational level, status of their employment and their monthly income.
- details about the diabetes which included the duration and treatments methods used;
- and experiences with folk remedies, in particular the types of folk remedies used, period of usage, the cost and subjective view of folk remedies, the reason for discontinuing its usage, and whether the subject is interested in trying new types of folk remedies if introduced again.

### Data analysis

Student's *t*-test or  $\chi^2$  test were performed on each answer of the questions. Statistical significance was set at less than 0.05.

## Results

Out of 3856 patients who visited these two outpatient departments during the 2-month study, 274 patients were eligible for the inclusion criteria. Of these, 186 (67.9%) patients agreed to participate in this survey. Out of the questionnaires of the 186 patients collected, 33 (17.7%) patients were excluded because these questionnaires were incomplete as some patients were unable to understand the question in full or unable to cooperate

with the interviews. Therefore, the questionnaires of 153 patients were enrolled for the analysis.

### Sample characteristics

Of the 153 subjects, 62 patients (40.5%) had experienced use of folk remedies. Patients' ranged in age from 40 to 78 years, with the average age being  $59.9 \pm 9.1$  years. The average age of the patients who had tried folk remedies ( $60.8 \pm 8.7$  years) were slightly older than ( $58.8 \pm 9.3$  years) those who had not. This did not reach statistical significance. All of the socioeconomic factors including sex, educational level, status of employment, average monthly income also showed no statistical significance. The duration of diabetes and types of treatment were no different either (Table 1).

### Nature of folk remedy usage

#### Kinds of folk remedies

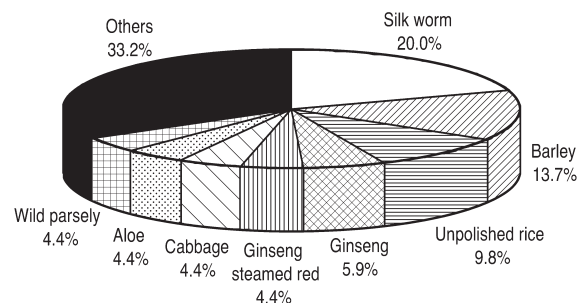
A total of 31 different types of folk remedies were used at least once. Classification and types of remedies are detailed in Table 2. In all, 205 different varieties were used. The frequency of each folk remedy is outlined in Fig. 1. Silk worms were the most popular (41 cases (20.0%)).

The average number of folk remedies used per person was 3.3 (with a range of 1–12). Among the 62 patients using folk remedies, the number using only one folk remedy was 19 (30.6%), and the number using two folk remedies was 13 (21.0%). Eight (13.0%) patients used more than six types of folk remedies.

#### The cost of using folk remedy

The costs of using folk remedies are outlined in Fig. 2. Seven (11.3%) patients stated that they spent more than 500 thousand won (390USAD) per month.

Nineteen persons (30.6%) tried it once, 14 people (22.6%) tried it twice and 10 people (16.1%) tried it three times. These three groups accounted for 69.4% of the sample. Twelve patients (19.4%) had taken folk



**Figure 1** Frequency of folk remedies used by diabetic patients ( $n = 205$ ).

**Table 1** Social and demographic features of study subjects

Variables*	Participants with experience of folk remedies ( <i>n</i> = 62) (%)	Participants without experience of folk remedies ( <i>n</i> = 91) (%)	Total ( <i>n</i> = 153) (%)
Age (Mean ± SD) (Years)	60.8 ± 8.7	58.8 ± 9.3	59.6 ± 9.1
Sex			
Female	30 (48.4)	43 (47.2)	73 (47.7)
Male	32 (51.6)	48 (52.8)	80 (52.3)
Education			
Not more than high school	53 (85.5)	75 (83.5)	129 (84.5)
More than high school	9 (14.5)	15 (16.5)	24 (15.5)
Occupation			
Out of work	39 (62.9)	50 (54.9)	89 (58.2)
Work	23 (37.1)	41 (45.1)	64 (41.8)
Monthly income			
Less than 2 million won <sup>†</sup>	43 (69.4)	62 (68.1)	105 (68.6)
More than 2 million won <sup>†</sup>	19 (30.6)	29 (31.9)	48 (31.4)
Duration of diabetes (years)	5.8	5.0	5.4
Type of treatment received			
Medication only	20 (32.3)	28 (30.8)	48 (31.4)
Diet and exercise only	10 (16.1)	9 (9.9)	19 (12.4)
Both	32 (51.6)	54 (59.3)	86 (56.2)

\*  $p > 0.05$  for all these variables. <sup>†</sup>2 million won is approximately 1563 US\$.

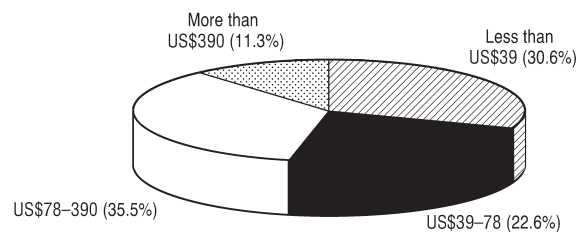
**Table 2** Sorts of folk remedies used by diabetic patients

Classifications	Types of folk remedies
Plant derived	Barley, mushroom, adlay, unpolished rice, apple, acorn, elm, wild rose, reflexus, raw bean, old pumpkin, cabbage, pine needle, kelp, anchovy, wild parsley
Animal derived	Silk worm, stool of silk worm, gaesoju, crucian carp, loach, maggot
Health foods	Ginseng steamed red, aloe, royal jelly, squalene, honey, vegetables
Herb medications	Mixed herb medication
Others	Bamboo salt

remedies for more than 2 years. Interestingly only 24 patients (38.7%) had discussed their use of folk remedies with a physician, while the others (38 cases (61.3%)) had not consulted a physician.

#### Choosing to use folk remedies

The recommendation for folk remedies by relatives and friends was the most common route.



**Figure 2** Monthly income spent when using folk remedies (*n* = 62). Korean won is converted to US dollar.

Concerning the treatment satisfaction of folk remedies, 46 subjects (74.2%) responded that they did not see any significant results. Out of the 41 subjects that stopped using folk remedies, the most common reason given was that they did not recognize that folk remedies had any effect on their disease (21 cases (51.2%)). Other reasons included economic costs, side-effects and advice from the doctor to stop.

#### Intention to use future folk remedies

A total of 33 (36.3%) patients who had not used folk remedies answered that they would not use folk remedies in the future compared to nine (14.5%) of those who had experienced folk remedies (Table 3).

**Table 3** Answers to the question: would you choose to use folk remedies in the future? ( $n = 41$ )

Patient's response*	Participants without experience of folk remedies	Participants with experience of folk remedies
I will not use	33 (36.3%)	9 (14.5%)
I will consult to my doctor	35 (38.4%)	33 (53.2%)
I will use	23 (25.3%)	20 (32.3%)
Total	91 (100%)	62 (100%)

$p < 0.05$  by  $\chi^2$  test.

## Discussion

Diabetes mellitus is a medical condition that has been known for thousands of years and has many traditional remedies. Traditional remedies seem to remain culturally strong in Asia, especially in oriental Asia and Korea compared to the western countries.<sup>14</sup>

We had assumed that some socioeconomic factors would be related to whether folk remedies for diabetes would be used or not. However, in this small study none of the socioeconomic factors of age, sex, educational level, status of employment or monthly income showed a statistically significant relationship. In addition, neither the duration nor treatment methods for diabetes seemed to be related to the pattern for using folk remedies. This may be partly due to our small study population size and thus the study does not have the power to demonstrate this association.

We have identified 31 types of folk remedies used by the 153 type II diabetics in this survey. A previous study in Korea involving 304 diabetes patients identified 82 types of folk remedies used.<sup>14</sup> Out of these folk remedies, aloe, cabbage, adlay, uncooked beans and red ginseng were identified as most commonly used.<sup>14</sup> However, according to our study, the most commonly used folk remedies were silkworm, barley, unpolished rice, ginseng, red ginseng, cabbage, aloe and wild parsley. It would appear that if people using folk remedies are not satisfied with one type of folk remedies, they will try other folk remedies to treat diabetes.

Interestingly, there was a wide diversity of the amount of money spent on folk remedies per month, from less than US\$39 to more than US\$390, despite

the fact that 69.4% of diabetic patients earn less than US\$1563 per month.

The fact that only 24 patients (38.7%) had discussed their folk remedy usage with a physician and that 38 patients (61.3%) had not consulted a physician was a cause for concern and suggested that doctors should ask their patients about their use of folk remedies.

In our results, recommendation from family members and close friends were the main route which lead many patients to try a folk remedy, followed by the recommendation of other diabetics, news reports, oriental medicine doctor and physicians. This suggests that the majority of diabetics are influenced by people around them to use folk remedies. Therefore, it is necessary to cooperate with not only patients, but also with relatives and friends when discussing the problems or treatment for the diabetes.

A total of 14.5% of survey participants replied that they would try new folk remedies, even though they had experienced no benefit from them. This suggests that a number of people will continue to look for a better folk remedy instead of the old one for their treatment. Similar results have been reported in previous research.<sup>14</sup>

The limitations of this research were the small number of patients surveyed and the fact that the study patients were localized in an urban area. In addition to this, the questionnaire was developed for this study only. It would require further assessment for external validity and reliability before it could be used in other studies. Unfortunately, patients who chose to not take part in the study were unable to be assessed for their characteristics, so it is unknown how they may have influenced the study findings. Due to these factors it is difficult to generalize these results to all Koreans or to another country.

## Conclusion

Folk remedies are relatively widely used in Korean diabetic patients. Although most of the diabetes patients who have experienced the use of folk remedies were not satisfied with their effects, primary physicians should realize that there could be a relatively high preference in some patients to use folk remedies. This study does highlight that future research in this area is needed to elucidate the facts that affect diabetic patients choice of therapy.

## References

- Okyar A, Can A, Akev N, Baktir G, Sutlupinar N. Effect of Aloe vera leaves on blood glucose level in type I and type II diabetic rat models. *Phytother. Res.* 2001; **15**: 157–61.
- Ajabnoor MA. Effect of aloes on blood glucose levels in normal and alloxan diabetic mice. *J. Ethnopharmacol.* 1990; **28**: 215–20.
- Gray AM, Flatt PR. Insulin-releasing and insulin-like activity of the traditional anti-diabetic plant *Coriandrum sativum* (coriander). *Br. J. Nutr.* 1999; **81**: 203–9.

- 4 Bolkent S, Yanardag R, Tabakoglu-Oguz A, Ozsoy-Sacan O. Effects of chard (*Beta vulgaris* L. var. Cicla) extract on pancreatic B cells in streptozotocin-diabetic rats: a morphological and biochemical study. *J. Ethnopharmacol.* 2000; **73**: 251–9.
- 5 Cheng JT, Yang RS. Hypoglycemic effect of guava juice in mice and human subjects. *Am. J. Chin. Med.* 1983; **11**: 74–6.
- 6 Gao Y, Lu R, Wang X *et al.* A clinical trial of tang shen ning for treatment of diabetic nephropathy. *J. Tradit. Chin. Med.* 1998; **18**: 247–52.
- 7 Chen Y, Wei L, Ma M, Wu G, Zhang G, Wei Z. Effect of jiawei shenqi dihuang tang on the content of urinary protein in patients with diabetic nephropathy. *J. Tradit. Chin. Med.* 1997; **17**: 184–6.
- 8 Ivorra MD, Paya M, Villar A. A review of natural products and plants as potential antidiabetic drugs. *J. Ethnopharmacol.* 1989; **27**: 243–75.
- 9 Gori M, Campbell RK. Natural products and diabetes treatment. *Diabetes Educ.* 1998; **24**: 205–8.
- 10 Tsiodras S, Shin RK, Christian M, Shaw LM, Sass DA. Anticholinergic toxicity associated with lupine seeds as a home remedy for diabetes mellitus. *Ann. Emerg. Med.* 1999; **33**: 715–17.
- 11 Keen RW, Deacon AC, Delves HT, Moreton JA, Frost PG. Indian herbal remedies for diabetes as a cause of lead poisoning. *Postgrad. Med. J.* 1994; **70**: 113–14.
- 12 Gill GV, Redmond S, Garratt F, Paisey R. Diabetes and alternative medicine: cause for concern. *Diabet. Med.* 1994; **11**: 210–13.
- 13 Nader T, Rothenberg S, Averbach R, Charles B, Fields JZ, Schneider RH. Improvements in chronic diseases with a comprehensive natural medicine approach: a review and case series. *Behav. Med.* 2000; **26**: 34–46.
- 14 Nam MS, Kim KR, Cho JH *et al.* A study on the folk remedies by the questionnaires in Korean diabetic patients. *Kor. J. Diabetes* 1994; **18**: 242–8.