

# Use of Herbal Remedies Among Patients Undergoing Hemodialysis

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This study aims to determine the prevalence, types, and associated factors for the use of herbal remedies in hemodialysis patients. Two hundred participants were selected by stratified sampling and were systematically interviewed. One hundred and twenty-six patients (63%) had used herbal remedies some time since their initiation of dialysis treatment. The users of herbal remedies had a significantly older age than nonusers, but no other significant differences were observed. The most prevalent complaints that led to the use of herbal remedies were gastroenterological complaints, flushing, and excessive thirst. *Cichorium intybus*, *Borago officinalis*, *Mentha longifolia*, and *Matricaria recutita* were the most prevalently used herbs in our patients. More study should be done on safety and efficacy of these herbs for hemodialysis patients.

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End-stage renal disease (ESRD) is a prevalent health problem worldwide. In a global overview, about 1 783 000 people underwent treatment for ESRD at the end of 2004.<sup>1</sup> Also, the total number of treated ESRD patients increases about 7% annually worldwide. In Iran, more than 3000 patients initiate renal replacement therapy annually. The annual number of patients with ESRD beginning maintenance treatment in Iran also increased 130% between 2000 and 2006.<sup>2</sup>

Some studies have assessed the use of different types of complementary and alternative medicine (CAM) in patients undergoing hemodialysis. A study in the United States has shown that 18% of dialysis patients had used or were using some form of alternative medicine therapies.<sup>3</sup> The use of herbal medicine in hemodialysis patients seems to have more risk susceptibility in comparison with that in the general population. It is mainly due to their loss of kidney function as the most important toxin excretion system, leading to accumulation of toxic material of herbal remedies. Volume overload and hyperkalemia are the other important considerations of herbal remedies in these patients. Also, it was

assessed that about 35% of acute kidney injury cases are caused by traditional remedies in the developing world.

Nephrotoxicity due to herbal remedies use is also reported from Iran.<sup>4</sup> Apart from the potential harm, there is increasing evidence that shows the potential benefits of these products for patients with chronic kidney disease.<sup>5</sup> Some studies have shown the beneficial potential of these products in hemodialysis patients suffering complications such as muscle cramps,<sup>6</sup> cutaneous pruritus,<sup>7</sup> and micro-inflammation.<sup>8</sup> This study aimed to evaluate these characteristics, factors, and materials in patients on hemodialysis at dialysis centers of Shiraz University of Medical Sciences.

In this cross-sectional study, 200 patients attending 3 hemodialysis centers in Shiraz in a 1 month period (April 2011 to May 2011) were interviewed. These patients were selected by stratified sampling from 520 registered routine hemodialysis patients. The data were collected using a semi-structured, face-to-face interview. Each interview lasted about 15 minutes. All the questions were read to the participants, and responses were

hand written by the interviewers. The first part of the questions included demographic data, duration and frequency of hemodialysis, and cause of ESRD. The second part was about herbal remedies which the patient had taken on the hemodialysis period. Questions on the patient's complaint or condition for taking each herbal remedy and satisfaction of use were also asked.

Use of herbal remedies was defined as the use of any herbal product which was not prescribed and taken to treat specific medical complaint or condition in the hemodialysis care period. Our study included all herbal products used for improving and curing health conditions as CAM use. Two physicians conducted all the interviews after taking the patient consent.

Descriptive statistics (means and proportions) were used to describe each variable. Bivariate comparisons of the user and nonuser groups were made using the chi-square test for categorical variables and the *t* test for continuous variables. *P* values less than .05 were considered significant.

The mean age of the patients was  $53 \pm 15$  years old (range, 21 to 90). One hundred and twenty patients (60%) were men, 66 (13%) were transplanted previously, and 154 (77%) were residents of Shiraz. Of the respondents to literacy question, 56 (28%) were illiterate, 81 (40.5%) were literate without

high school graduation, 39 (19.5%) were high school graduates, and 19 (9.5%) had academic education. Causes of ESRD were diabetes mellitus (40%), hypertension (33%), obstruction (10%), autoimmune diseases (7%), and infection (4.5%). Other causes such as polycystic kidney disease, acute tubular necrosis, trauma, etc, accounted for 30% of ESRD cases, and the other 30% of the patients had unknown cause. The mean duration of hemodialysis was 2.5 years with the mean frequency of 2.47 sessions per week.

One hundred and twenty six patients (63%) had used herbal remedies since the start of the dialysis treatment. The users of herbal remedies were significantly older than the nonusers. No other significant differences were observed between the two groups in the level of education, Shiraz city residency, or duration and frequency of hemodialysis. Multiple herbal products were used by the user group for different medical complaints and conditions. The most prevalently used herbs by hemodialysis patients were *Cichorium intybus*, *Borage officinalis*, *Mentha longifolia*, and *Matricaria recutita*, respectively. Other herbs used by these patients and the prevalence of their use are summarized in Figure 1.

Taking these herbs in the form of distillate and decoction was more prevalent than dry raw forms.

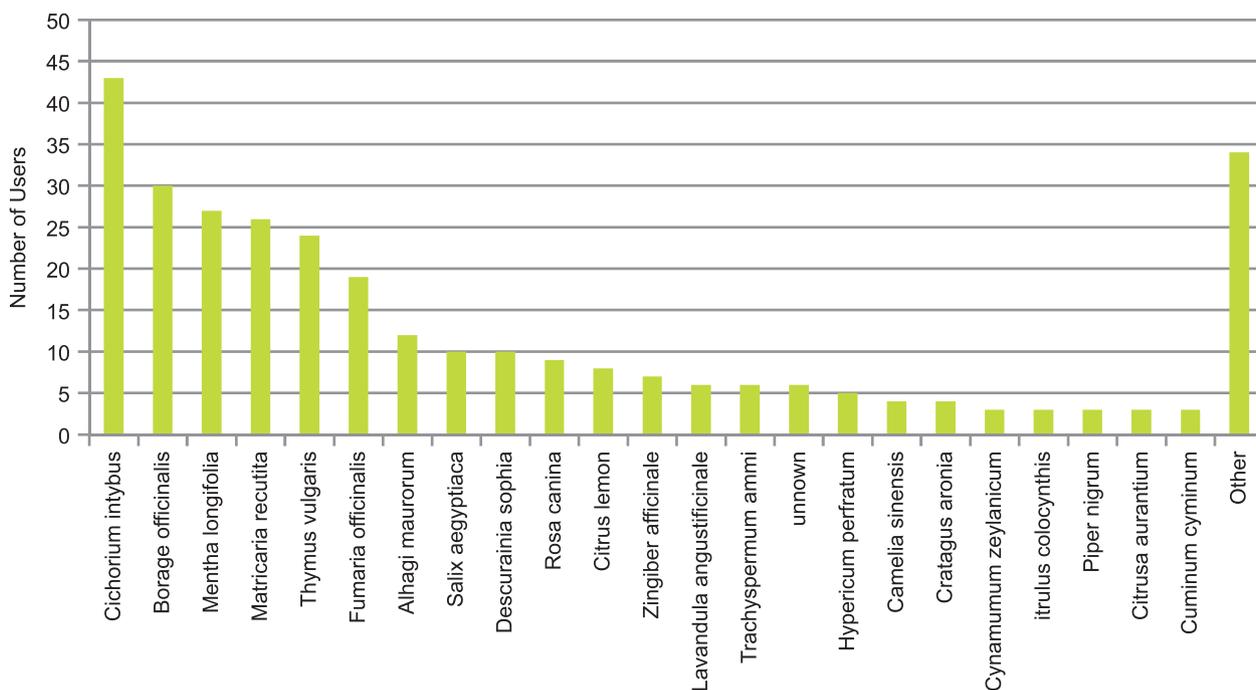


Figure 1. Herbal medicine used by hemodialysis patients.

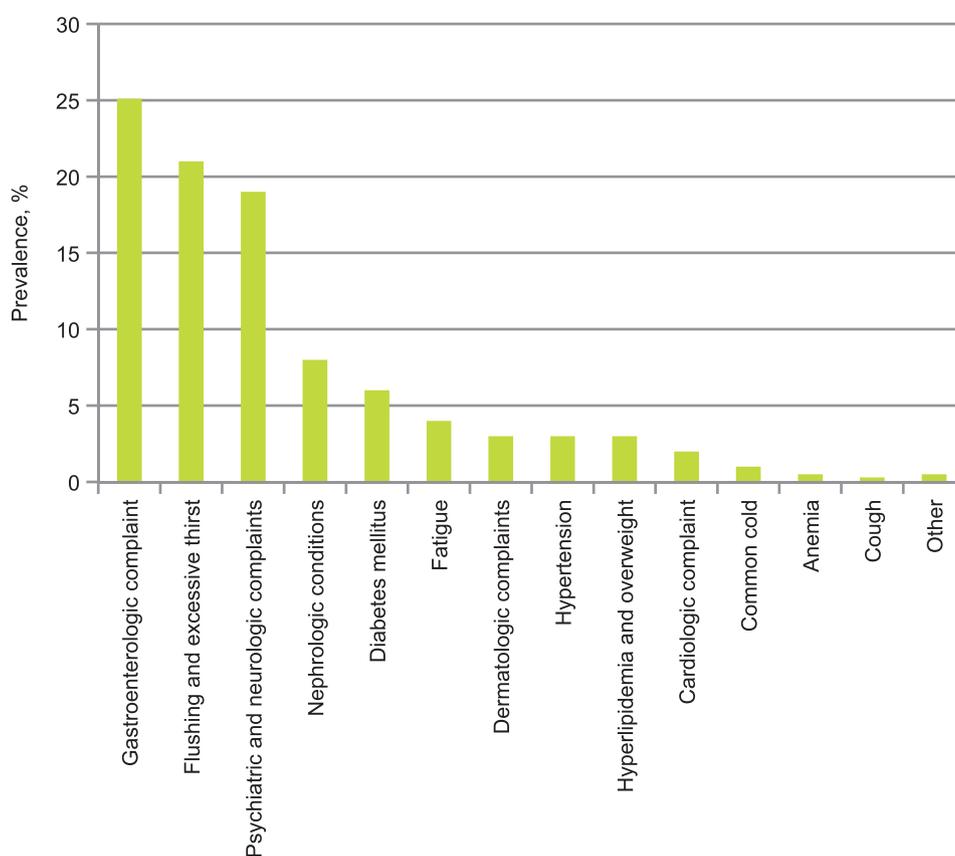
The most prevalent complaints leading to herbal remedies use were gastroenterologic complaints such as epigastric pain, reflux, nausea and vomiting, and constipation (25%). Flushing and excessive thirst were the second frequent complaints leading to the use of herb (21%). Psychiatric and neurologic conditions (depression, dizziness, headache, and tremor) had the 3rd position (19%). Nephrologic conditions such as urinary calculus, increased serum creatinine, and edema were other reasons for the use of herbal remedies. Dermatologic complaints were pruritus, uremic skin color, and rash when cardiologic complaints included chest pain and palpitation. Other causes of the use of herbal remedies are summarized in Figure 2.

Our study shows 63% use of herbal medicine in Shiraz hemodialysis patients, being significantly more prevalent in older patients, mostly for treating gastroenterologic problems. The prevalence of herbal medicine use in our study (63%) was nearly similar to that of the previous community based study in Esfahan, Iran (62.5%).<sup>9</sup> Similar to our study, digestive problem was the most prevalent cause of CAM

use in this survey. However, this study evaluated all forms of CAM use. Other studies on pregnant women<sup>10</sup> and cancer patients<sup>11</sup> in Tehran showed the CAM use prevalence less than our evaluation. Definition of “CAM use” can cause these differences.

In a study in the United States, only 18% of hemodialysis patients reported CAM use. Besides the previous factors, cultural differences in study populations can cause these gaps in findings. Different levels of “CAM use denial,” which is strongly influenced by the setting in which the patient is questioned about CAM use, can also cause extremely different results. Underestimation of CAM use due to the patient’s denial was one of the most important limitations of this study. Recall bias is another problem in this cross-sectional survey which was based on the previous history of herbal remedy use.

Lack of kidney function makes the hemodialysis patients susceptible to different risks from herbal remedies. Electrolyte imbalances such as hyperkalemia are one of these risks that can be caused by herbs such as Licorice root.<sup>12</sup> Some of



**Figure 2.** Conditions leading to herbal medicine use by hemodialysis patients.

diuretic herbs are of particular interest to dialysis patients with urine output; they believe that they may be able to stimulate their declining kidney function and thus decrease the need for dialysis. Most of these herbs should be more precisely called “aquaretics” in that they increase glomerular filtration rate and urine output but they do not stimulate the urea and electrolyte secretion.<sup>13</sup> As a result, they may alter serum electrolytes and consequential cardiovascular consequences.

On the other hand, herbal remedies in these patients may have several potential benefits. Multiple studies have shown these benefits in decreasing muscle cramps, cutaneous pruritus, oxidative stress status, micro-inflammation and dialysis frequency.<sup>7,8,14</sup> In our study, the patients reported satisfaction in 89% of herbal products used. This finding is compatible with other studies' results.<sup>15</sup> As a result, herbal remedies are a potential option to decrease concomitant health problems of hemodialysis patients, such as gastrointestinal, psychiatric and neurologic complaints, after appropriate evaluations.

Usually, physicians are not aware of the extent of herbal remedies use due to multiple factors. Also, physicians do not often consider some forms of herbal remedies that are routine in healthy people's diet, as a potential risk for their patient with non-functioning kidney. On the other hand, they sometimes prevent their patients from taking a safe and clinically useful herbal product due to lack of proper knowledge or evidence. It seems that clinical evaluation of the routine folklore herbal products by standard protocols in hemodialysis patients can help the patients and physicians to make an evidence-based decision about taking or not taking different herbal products.

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### CONFLICT OF INTEREST

None declared.

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