



Research Article

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The Effect of Aromatherapy with Chicory essence On The Quality of Life In Patients Undergoing Hemodialysis

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ABSTRACT

Introduction and objective: Patients with end-stage chronic renal disease (ESRD) undergo dialysis therapy to maintain their health. As increasing incidence of ESRD and because of chronic procedures in these patients, they suffer from difficult conditions and complications associated with underlying diseases; therefore, as continuous dialysis procedure proceeds, it develops a number of physical and mental problems in patients that results in reduced quality of life in these patients. Accordingly, it would be an important attempt to improve the life quality of life in these patients. The aim of this study was to evaluate the effect of aromatherapy with chicory essence in improving the quality of life in patients undergoing hemodialysis. **Materials and methods:** In this interventional clinical trial study, a total number of 80 hemodialyzed patients were examined (divided in two independent groups that each one consists of 40 individuals named as intervention and control groups). The intervention group were given wet handkerchiefs scented with chicory essence and were asked to clean their hands and faces at least three times a day, each time for five minutes during four weeks. The control group were provided with wet handkerchiefs without the essence and they were also asked to repeat exactly the same task. The quality of life was determined using a SF36V2 questionnaire at the beginning and the end of study and compared between the two groups. **Results.** General health in the intervention patients was significantly better than the control group and the average quality of life in the intervention group was measured superior than the control patients. **Discussion and Conclusion:** The results of this study showed that aromatherapy with chicory essence increases the average quality of life in hemodialyzed patients, although the enhanced quality of life was not so substantial that it could definitely be recommended in these patients. Also, as other factors affect the quality of life and its changes in these patients, the use of chicory essence can still be considered in hemodialyzed patients.

Keywords: Hemodialysis, Quality of Life, Aromatherapy, Chicory essence

INTRODUCTION

Increased incidence of chronic renal disease and increased healthcare costs of the patients involved vindicates the need for primary care and follow-up of these patients to do what is necessary for these patients in the first-line patient referral system. From the 1980s onwards, the number of patients who need kidney transplantation and/or dialysis therapy (ESRD) has increased dramatically, and due to the high cost of both therapeutic methods and disease complications' treatments, exploration of an approach has always been considered to reduce the complications of the disease [1]. Patients with ESRD undergo dialysis at final stages for their health care. The number of patients under dialysis treatment has increased in recent years and due to the chronic procedure of dialysis, the patient suffers from difficult situations; meanwhile, patients treated with dialysis are facing a variety of

physical, mental and social stressors and have a feeling of anxiety concerning their future. The quality of life in dialysis patients, therefore, is an important issue that deserves further investigations [2,3].

In many countries, most ESRD patients undergo hemodialysis at final stages to continue living. Paying attention to these issues, it is necessary to conduct research in order to improve the quality of life in patients experiencing hemodialysis [4]. Several studies have shown that the quality of life in patients treated with dialysis can depend on various factors [5]. Obviously, both the adequacy and duration of dialysis affect the survival and life quality of the patients [6,7]. Dialysis patients experience plenty of problems according to their own physical and mental conditions [8]. Specific problems such as pain, depression, and increased stress levels can be noted in patients undergoing dialysis [9]. In these patients, blood cortisol level is high [10], which increases their levels of stress.

So far, the usage of aromatherapy in the treatment of diseases have been demonstrated as complementary and alternative medicine [11]; yet, more research is needed to evaluate the efficacy and safety of using medicinal herbs [12]. Additionally, previous studies have shown that the rate of complementary medicine therapies (and especially medicinal herbs) in hemodialyzed patients to be very high even up to sixty percent of the patients with end-stage renal disease in one study [13]. This is despite the fact that none of the treatments applied have been proven to be scientifically efficient and undertaken arbitrarily by the patients necessitating research in this area [13]. Furthermore, in one study on hemodialyzed patients in Iran it was concluded that the use of chicory extract had the highest frequency among the herbal medicines used in hemodialyzed patients; while no adequate studies are available on the effectiveness of this product [13].

Chicory plant scientifically named as *Cichorium Intybus* is a herb that has long been used in traditional medicine as an antipyretic, anti-inflammatory, and being useful in patients with liver and kidney diseases. The essence of this plant consist of terines and ketones that is known as effective in reducing inflammation, and as a sedative as well as an antipyretic [14 , 15].

Materials and methods

This study evaluated the effect of aromatherapy with chicory essence on the quality of life in hemodialyzed patients admitted to the Rassol-e Akram Medical Center. (Morality of the study was accepted in ethics committee and the research was given code No. 295037). The patients eligible for the study were investigated in an interventional clinical trial, in two groups of 40 patients (as intervention and control groups). First, informed consents were taken from the patients with inclusion criteria to participate in research and they were given assurance that their medical history and information will be kept secretly and they were able to leave the study any time that they want. Then the quality of life was assessed using a SF36V2 questionnaire for each patient before entering the study. The intervention group were given packages containing wet handkerchiefs scented with chicory essence and trained practically to clean their hands and faces thrice a day, each time for five minutes within four weeks. Each handkerchief was supplied in separate packaging, which was discarded separately after use. The same procedure was exactly performed to the control group, with the difference that they received only handkerchiefs with no essence. This was a single-blind study in which the patients were not aware of the presence/absence of essence in a handkerchief at baseline. Four weeks after the start of study, the above parameter (mean quality of life) was measured again and the results were compared with the pre-measurement values using statistical tests. Data were analyzed by SPSS software, and independent t-test compared mean quantitative variables between the two groups. The life quality of patients in this study was measured using a SF36V2 questionnaire containing 36 questions in 8 different areas. The answers to the questionnaire is based on a scoring system assigning individual questions in each area a score between zero to six, which are then compared according to the scores attained in each area. The validity (reliability) of this questionnaire has been confirmed for the Iranian population (Montazeri et al., 2005; Asghari and Faghehi, 2003). The internal consistency factors of its octoploid subscales have been reported to be between 70.0 and 85.0, and the retesting coefficients with an interval of one week to be between the 43.0 and 79.0 (Asghari and Faghehi, 2003).

Inclusion criteria for this study was:

1. Age over 18 years old.
2. Being on dialysis treatment for at least 3 months.
3. Being on hemodialysis at least 2 times in week.
4. Satisfaction to complete the quality of life questionnaire.
5. Lack of psychosis or cognitive problems.
6. Lack of allergy to Chicory essence.
7. Lack of use of complementary medicine (e.g. herbal medicine) in recent month.
8. Lack of hospitalization during the last two months.
9. Lack of history of renal transplantation.

Exclusion criteria for this study was:

1. Having any kinds of allergy symptoms after using Chicory essence.
2. Not using Chicory essence for more than 1 day.
3. Dying or renal transplantation.

Findings

In this study, there were 42 men and 38 women from a total of 80 patients eligible for inclusion in the study (23 men and 17 women in the intervention group and 19 men and 21 women in the control group) (Table1). The average ages of the participants were 70.8 and 70.98 years, respectively, in the intervention and the control groups (Table2).

Table 1 . Frequencies of sex ratio between the intervention (1) group and control (2) group

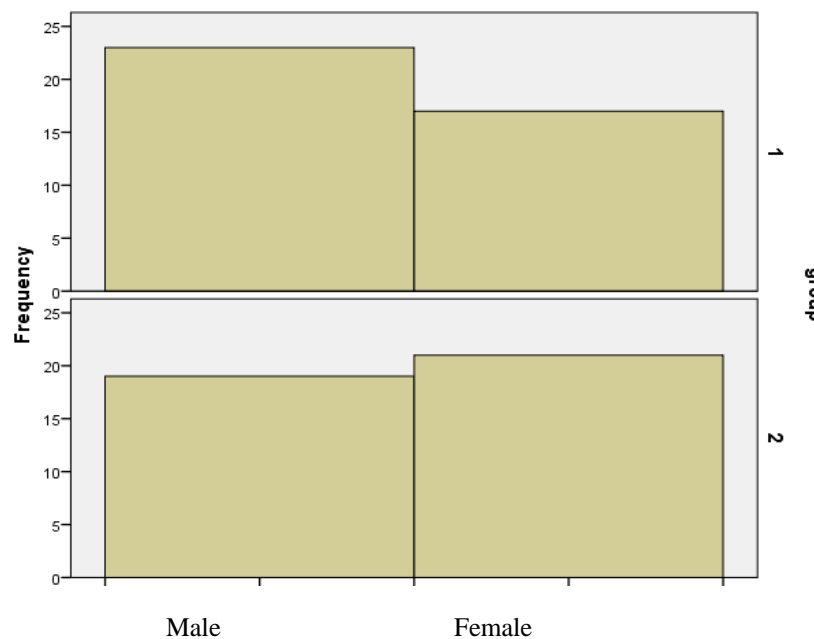
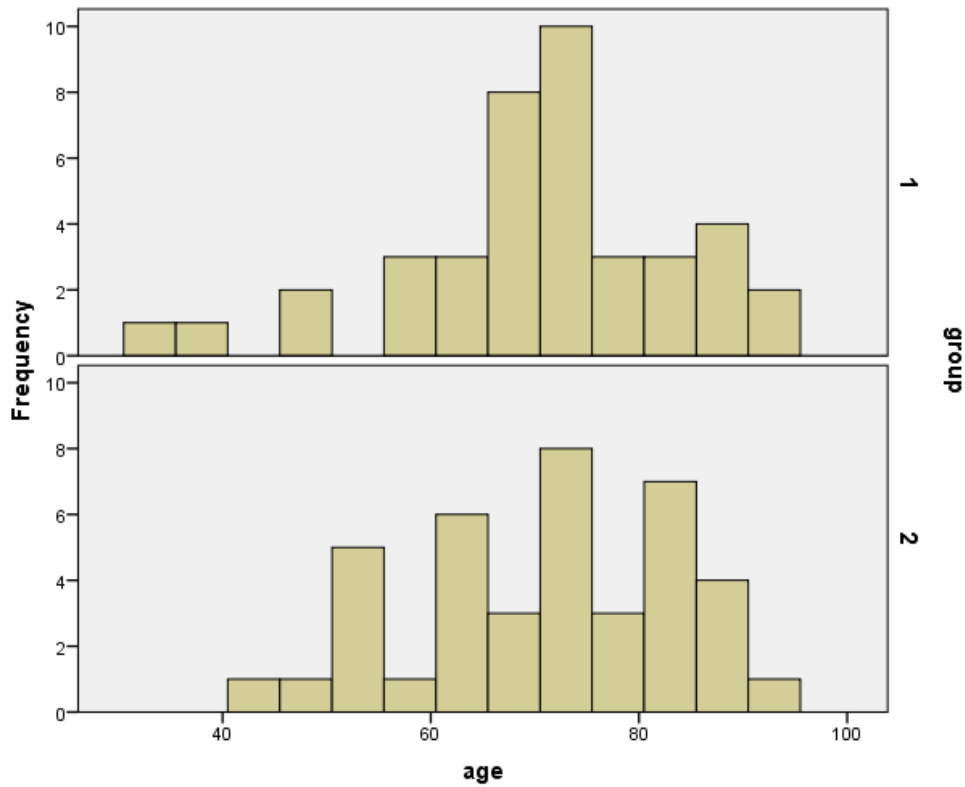


Table 2 . Frequency of age (years) of patients in the intervention (1) and control (2) groups



The mean age of all patients participating in this study was 70.92. The most common reasons of ESRD among patients were diabetes mellitus and hypertension (with cumulative ratio of 78.8 percent of causes of ESRD among patients) (Table 3).The mean time passed from beginning of dialysis treatment among the patients was 6.7 months (7.9 months among patients in the intervention group and 5.5 months among patients in the control group).

Table 3. Frequency of different causes of ESRD among patients in the study

Causes of ESRD	Frequency	Percent
DM	37	46.3
HTN	26	32.5
Lupus nephritis	6	7.5
Wegner disease	1	3.8
Others(e.g.congenital anomaly,idiopathic)	10	9.4
Total	80	100.0

The results of this study were analyzed in eight areas as explained bellow.

In "Physical Function", "Role-Limitations due to physical problems", "the Pain", "the Energy and Exhilaration", "the physical problem and its interaction with Social Affairs, and the patient's social health", "the Role-Limitations due to emotional problems", and "the Mental and Psychiatric Health of patients", A comparison between the beginning and end of the study revealed no significant differences between the two groups of intervention and control ($P > 0.05$), but the two groups were significantly different with respect to "General Health" before and after the study, so that the level of general health was significantly better in intervention group than that in the control samples ($P < 0.05$) in the end of the study. Tables 4 shows descriptive statistics for the quality of life in patients at the beginning of the study. Table 5 shows descriptive statistics for the quality of life in patients after the intervention.

Table 4. Baseline descriptive statistics for the life quality of patients

Variable		Average	P Value
Physical performance	Case	20.7	0/066
	Control	18.5	
Role-limitations due to physical problems	Case	1.4	0/178
	Control	1.0	
Physical pain	Case	5.9	0/308
	Control	5.3	
General health	Case	15.7	0/101
	Control	15.7	
Exhilaration	Case	12.1	0/737
	Control	12.9	
Social Performance	Case	5.7	0/898
	Control	4.9	
Role-limitations due to emotional problems	Case	1.1	0/911
	Control	1.1	
Mental health	Case	11.7	0/9
	Control	11.8	

Table 5. Descriptive statistics for the post-intervention quality of life in the samples

Variable		Average	P Value
Physical performance	Case	20.9	0/051
	Control	18.6	
Role-limitations due to physical problems	Case	1.5	0/106
	Control	1.4	
Physical pain	Case	6.0	0/365
	Control	5.3	
General health	Case	15.9	0/04
	Control	15.8	
Exhilaration	Case	12.0	0/406
	Control	12.9	
Social performance	Case	5.9	0/915
	Control	4.9	
Role-limitations due to emotional problems	Case	1.4	0/853
	Control	1.2	
Mental health	Case	12.0	0/5
	Control	11.9	

This study evaluated the effect of aromatherapy with chicory essence on the quality of life in hemodialyzed patients admitted to the Rasool-e Akram Medical Center. The patients eligible for the study were investigated in an interventional clinical trial, in two groups of 40 patients (as intervention and control groups). First, informed consents were taken from the patients that had inclusion criteria to participate in research and then the quality of life was assessed using a SF36V2 questionnaire for each patient before entering the study. The intervention group were given packages containing wet handkerchiefs scented with chicory essence and trained practically to clean their hands and faces thrice a day, each time for five minutes within four weeks. Each handkerchief was supplied in separate packaging, which was discarded separately after use. The same procedure was exactly performed to the control group, with the difference that they received only handkerchiefs with no essence. This was a single-blind study in which the patients were not aware of the presence/absence of essence in a handkerchief at the beginning of the study. Four weeks later, the parameter (mean quality of life) was measured again and the results were compared with the pre-measurement values using statistical tests. Data were analyzed by SPSS software, and independent t-test compared mean quantitative variables between the two groups. The life quality of patients in this study was measured using a SF36V2 questionnaire containing 36 questions in 8 different areas. The answers to the questionnaire is based on a scoring system assigning individual questions in each area a score between zero to six, which are then compared according to the scores attained in each area. The validity (reliability) of this questionnaire has been confirmed for the Iranian population (Montazeri et al., 2005; Asghari and Faghehi, 2003). The internal consistency factors of its octoploid subscales have been reported to be between 70.0 and 85.0, and the retesting coefficients with an interval of one week to be between the 43.0 and 79.0 (Asghari and Faghehi, 2003).

Discussion and Conclusion

In this study, the effect of aromatherapy with chicory essence was studied on the quality of life in hemodialyzed patients. Individuals undergoing hemodialysis face a number of stressors that have significant impacts on the quality of life in hemodialysis patients.

During this study, it was found that aromatherapy with chicory essence had a positive effect on the general health of hemodialyzed patients and altogether improved the average life quality of these patients; as it is shown in the table, mean score of general health is much more better in intervention group than in control group ($P < 0.05$); nonetheless, this increase was not significant enough to definitely encourage the patients to take advantage of this plant. Although previous studies introduced using chicory as a sedative and stress reducer [14, 15], the results of this study showed no supporting evidence; as two important factors assessing mental health in this questionnaire (role-limitation due to emotional problems and mental health) show no significant differences between two groups at the end of the study ($P > 0.05$), which could be due to differences in the way of using this product (previous studies examined the effect of chicory extract while this study questioned the effects of topical and inhaled uses). As it is shown in the tables physical issues in the patients (measured by physical performance and role-limitation due to physical problems) was a bit better in intervention group than control group at the end of the study and the worsening process in role-limitation in intervention group was slower than control group (in intervention group the mean of role-limitation due to physical problems changed from 1.4 to 1.5, but this change was greater in control group 1.0 to 1.4); Meanwhile, when analyzed in association with other factors, it is not considerably different ($P > 0.05$). About physical pain, as it is shown in the table, physical pain differences between two groups was not significant at the end of the study ($P > 0.05$); although the mean of this variable was a bit better in intervention group means that patients in intervention group suffered less physical pain than patients in control group (mean 5.9 changed to 6.0 in intervention group and mean 5.3 remained at this rate in control group). Social performance variable in intervention group was a bit better than in control group (5.7 changed to 5.9 in intervention group and 4.9 remains approximately the same in control group) but when analyzed by statistical tests it shows no significant difference ($P > 0.05$). Looking at exhilaration scores and comparing them between two groups shows that although patients in intervention group show less energy wasting, but when assessed in comparison to control group it is not very significant difference between two groups at the end of the study (12.1 changed to 12.0 in intervention group and 12.9 remained the same in control group). Considering that this study applied aromatherapy in hemodialyzed patients using this plant, further investigations are required to clarify the effect of the plant in other forms (e.g. oral) so that its impact on the life quality of patients could be explained with greater certainty. It is also suggested that the effects of chicory in combination with other therapies in hemodialyzed people to be explained by other studies in order to explore the possibility of increasing the effectiveness and the pace of treatment of the complications in these patients.

Key words

Hemodialysis: A procedure based on diffusion through a semi-permeable membrane to separate blood components using a hemodialysis machine.

Quality of life: Quality of life has a multidimensional and complex concept and involves both objective and subjective factors. Quality of life is often a clear understanding of satisfaction in life, physical health, social and family health, expectancy, etiquette, and mental health of patients. The major dimensions of quality of life include physical, emotional, social, and psychological welfare.

Aromatherapy: Aromatherapy is a form of complementary medicine that uses essential oils or aromas extracted from aromatic plants.

Chicory essence: Chicory with the scientific name of *Cichorium Intybus* is a plant belonging to the Asteraceae family. Chicory is a herb that has long been used in traditional medicine because of febrifuge and urinary tract cleansing properties. Chicory essence is the extract of chicory plant flowers.

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