The Effect of Salvia officinalis oil on Some Physiological Variables for People Who Suffer from Chronic Diseases

Reem khalid Ibrahim[1], Oqbah Abdul Halim[2], Nafi Ahmed Saud[3]
[1]Department of biology, collage of sciences, university Of Anbar, Iraq
[2, 3]Department of biology, collage of Education for pure sciences, university Of Anbar, Iraq
Email: reem.khalid@uoanbar.edu.iq

Abstract
Background: The active compound in sage is the essential oil, which consists of ketones, alpha-thujone, and beta-thujone Other active compounds, such as: Borneol, Cineol, Cornsole, and Fumaric Acids like Cornsolic acid, Tannic acid, and Nicotinic acid. Methodology: The extraction process used an organic solvent (ethyl alcohol) at a concentration of 95%, where 20 were placed Use for extraction. Extraction (glass flask) of one liter capacity ml of the organic ethanol solvent was added and the extraction process was carried out by a device Soxhlet extract) and the extraction was continued for 24 hours at a temperature of 45 ° C, in isolation A solvent under low pressure using an evaporator vammrotary device to obtain the alcoholic extract Extract cut while in use The number of people with high blood sugar reached thirty, and they were divided into 15 men and 15 women, twenty of whom had high blood sugar and 10 had control. The first group of men was given 3 drops of sage oil and the second group was given 6 drops and the third was not given a control group and repeated the same treatments on Women. Result shows the effect of sage oil on reducing the cumulative sugar of diabetics, as the cumulative sugar concentration in men who consumed the oil reached two drops and those who consumed three drops, where it reached a concentration of 8 and 6 respectively compared to the control, where it reached 12 and women who consumed two and three drops of sage oil for a period of 6 months , 5, respectively, compared to control, where its concentration was 12 indicative of reducing sage oil for sugar in treatments compared to control .
Keywords: Salvia officinalis oil, physiological variables, chronic diseases

1. Introduction

Sage (Scientific name: Salvia officinalis) is one of the herbs known since ancient times. It is an evergreen perennial shrub with a sharp flavor and aromatic aroma, found in the regions of the Mediterranean basin and southeastern Europe.(1) Since the Roman era, it has been used for many medicinal and therapeutic purposes, and now it is used in the manufacture of many medicinal and medicinal preparations. Beekeeper.(2) Sage is safe to use, whether by taking it orally, or using it within external creams and preparations if it is within the recommended quantities and that its intake does not exceed a period of four months.(3) Sage may have an effect on blood sugar levels, as it may lead to lowering them, so the diabetic patient must pay attention to the quantities that he may eat from it so as not to cause him a sharp and sudden decrease in blood sugar levels.(4,5) It may be advised to avoid taking sage or taking it in the form of medicines at least two weeks before performing surgery.(6,7) This is so that blood sugar levels are controlled during and after surgery.(8,9) Active compound., The active compound in sage is the essential oil, which consists of ketones, alpha-thujone, and beta-thujone Other active compounds, such as: Borneol, Cineol, Cornsole, and Fumaric Acids like Cornsolic acid, Tannic acid, and Nicotinic acid .(10,11) Many women may resort to using herbs to treat some of their child's health problems, because they believe that everything natural is safe and effective and there are no side effects to it, and of course this is not true.(12,13) This applies to sage that may be useful when used in a suitable dose and for the treatment of specific cases, except There are still few studies on its effect on the health of the child, so it is not recommended to use it for your child without consulting his specialist doctor.(14)

2. Methodology

Extracting sage oil

The extraction process used an organic solvent (ethyl alcohol) at a concentration of 95%, where 20 were placed Use for extraction. Extraction (glass flask) of one liter capacity ml of the organic ethanol solvent was added and the extraction process was carried out by a device Soxhlet extract) and the extraction was continued for 24 hours at a temperature of 45 ° C, in isolation A solvent under low pressure using an evaporator vammrotary device to obtain the alcoholic extract Extract cut while in use (15)

Diabetics not dependent of insulin

The number of people with high blood sugar reached thirty, and they were divided into 15 men and 15 women, twenty of whom had high blood sugar and 10 had control. The first group of men was given 3 drops of sage oil and the second group was given 6 drops and the third was not given a control

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group and repeated the same treatments on Women.

Patients with high triglycerides and cholesterol

The number of people with high triglycerides and cholesterol in the blood was thirty, and they were divided into 15 men and 15 women, twenty of whom had high triglycerides and cholesterol and 10 were controlled. The first group of men was given 3 drops of sage oil and the second group was given 6 drops and the third was not given a control group and repeated the same treatments for women.

3. Result

Table 1: The effect of sage oil on reducing the HBA1c of diabetics			
Descriptive Statistics			
Dependent Variable: HBA1c concentration			
gender	sage oil	Mean	Std. Deviation
male	3 drops daily	8.00	.707
	6 drops daily	6.00	.707
	control	12.40	.548
	Total	8.80	2.833
female	3 drops daily	6.60	.548
	6 drops daily	5.20	.837
	control	11.80	.837
	Total	7.87	3.021
Total	3 drops daily	7.30	.949
	6 drops daily	5.60	.843
	control	12.10	.738
	Total	8.33	2.916

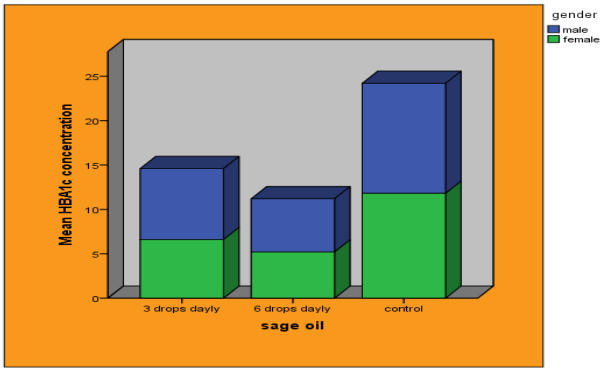
The first of these benefits of boiled sage is weight reduction, slimming or dieting, through the ability of sage to burn fat and add a state of satiety at times after drinking boiled sage, which leads to leaving meals of foods that may be one of the causes of obesity. The magic for diabetics, as the doctors described it as an effective magic treatment to reduce the level or rate of sugars in the body, which gives the patient a state of stability in the rate of diabetes if it is met with moderate eating and away from excessive sugar intake. Table 1 shows the effect of sage oil on reducing the cumulative sugar of diabetics, as the cumulative sugar concentration in men who consumed the oil reached two drops and those who consumed three drops, where it reached a concentration of 8 and 6 respectively compared to the control, where it reached 12 and women who consumed two and three drops of sage oil for a period of 6 months , 5, respectively, compared to control, where its concentration was 12 indicative of reducing sage oil for sugar in treatments compared to control As shown in Figure 1

Table 2: ANOVA table of effect sage oil on reducing the HBA1c of diabetics					
Tests of Between-Subjects Effects					
Dependent Variable: HBA1c concentration					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	234.667[a]	5	46.933	93.867	.000
Intercept	2083.333	1	2083.333	4166.667	.000
gender	6.533	1	6.533	13.067	.001
treatment	227.267	2	113.633	227.267	.000
gender * treatment	.867	2	.433	.867	.433
Error	12.000	24	.500		
Total	2330.000	30			
Corrected Total	246.667	29			
a. R Squared = .951 (Adjusted R Squared = .941)					

Table 2 shows the analysis of variance table, not the effect of sage oil in reducing blood sugar and cumulative sugar, as there were significant differences for the treatments compared to the control separately for men and women, and there were no significant differences between the same treatments, and there were no significant differences between gender and the treatments.

Sage has been used for healing for thousands of years, so it was like other plants and herbs for healing from diseases, and even today, despite the availability of medicines, these methods of treatment are indispensable to us, and in the same context it is indicated that sage is one of the herbs that contribute to increasing focus and stimulate Mental abilities and thinking, which is thus prescribed for the elderly and Alzheimer's patients, as well as anti-inflammatory and repellent to parasites, and was found to have a role in promoting heart health and reducing cholesterol, and is classified as an immune-boosting herb, diuretic and used to treat coughs, bronchitis, laryngitis, asthma and indigestion, It also reduces sweating and is beneficial for healthy skin, Table 3 shows the effect of sage oil in lowering blood sugar for patients who had a significant increase in cholesterol, as a clear reduction was observed in the first treatment in men who consumed the oil at a rate

of two drops per day 139 and who consumed the oil at a rate of three drops per day 122 compared to control. The cholesterol concentration was 246, and in the women in the first treatment the cholesterol percentage was 133, and in the second treatment the ratio was 117 compared to the control 259, which proves that sage oil has a significant role in lowering cholesterol in the blood as shown in Figure 2.



Figurer 1 effect sage oil on reducing the HBA1c of diabetics

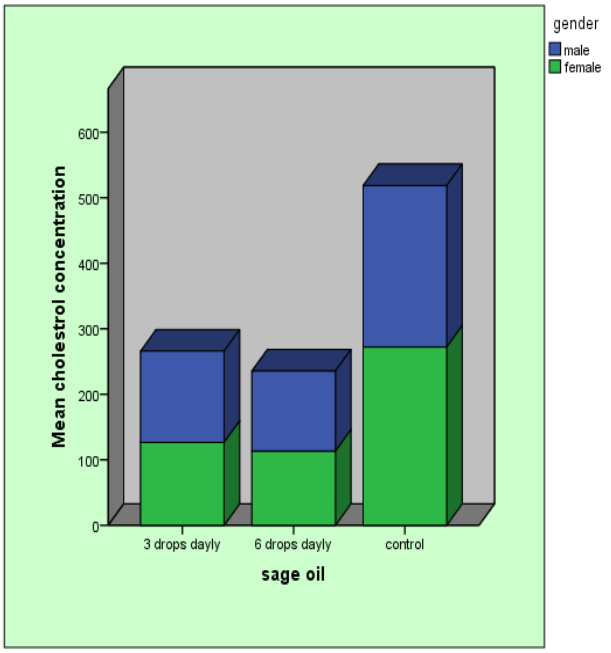


Figure 2 The effect of sage oil on blood cholesterol

Table 3: The effect of sage oil on blood cholesterol				
Descriptive Statistics				
Dependent Variable: cholesterol concentration				
gender	sage oil	Mean	Std. Deviation	
male	3 drops daily	139.40	8.961	
	6 drops daily	122.60	.894	
	control	246.60	14.415	
	Total	169.53	57.573	
female	3 drops daily	126.60	5.030	
	6 drops daily	113.00	5.050	
	control	272.00	27.749	
	Total	170.53	76.046	
Total	3 drops daily	133.00	9.615	
	6 drops daily	117.80	6.106	
	control	259.30	24.775	
	Total	170.03	66.274	30

Table 4: ANOVA table The effect of sage oil on blood cholesterol					
Tests of Between-Subjects Effects					
Dependent Variable: cholestrol concentration					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	122936.167a	5	24587.233	132.940	.000
Intercept	867340.033	1	867340.033	4689.592	.000
gender	7.500	1	7.500	.041	.842
treatment	120683.267	2	60341.633	326.259	.000
gender * treatment	2245.400	2	1122.700	6.070	.007
Error	4438.800	24	184.950		
Total	994715.000	30			
Corrected Total	127374.967	29			
R Squared = .965 (Adjusted R Squared = .958)					

Table 4 shows the analysis of variance table that there are significant differences between the treatments and the control separately, as it was noticed that in the first treatment for men, there were significant differences in the reduction of sage oil to the proportion of cholesterol in the blood compared to the control, and there were significant differences in the second treatment of women compared to the control, and there were no Significant differences for the same transactions. There were no significant differences between the treatment of men and women

References

1. Koubaa FG. Anti-oxidant and hepatoprotective effects of Salvia officinalis essential oil against vanadium-induced oxidative stress and histological changes in the rat liver. 2020;
2. Reza M, Pirkhezr E, Ashra A, Sonboli A. Biomedicine & Pharmacotherapy Accelerated

healing by topical administration of Salvia o ffi cinalis essential oil on Pseudomonas aeruginosa and Staphylococcus aureus infected wound model. 2020;128(September 2019).
3. Kulak M, Gul F, Sekeroglu N. Industrial Crops & Products Changes in growth parameter and essential oil composition of sage (Salvia o ffi cinalis L .) leaves in response to various salt stresses. Ind Crop Prod [Internet]. 2020;145(September 2019):112078. Available from: https://doi.org/10.1016/j.indcrop.2019.112078
4. Zohra F, Hazzoumi Z, Benhima R, Amrani K. Effects of salicylic acid on growth , mineral nutrition , glandular hairs distribution and essential oil composition in Salvia officinalis L . grown under copper stress. Environ Sustain [Internet]. 2020;(2007). Available from: https://doi.org/10.1007/s42398-020-00109-x
5. Bedini S, Guarino S, Echeverria MC, Flamini G, Ascrizzi R, Loni A, et al. and Salvia officinalis Essential Oils : A Spiced Shield against Blowflies. 2020;1–18.
6. Zajkowska M, Gacuta E, Koz S, Lubowicka E, Edyta KG. Advances in Medical Sciences Diagnostic power of VEGF , MMP-9 and TIMP-1 in patients with breast cancer . A multivariate statistical analysis with ROC curve. 2019;64(August 2017):1–8.
7. Eldin E, Nour M, El-readi MZ, Mahmoud M, Eldein N, Alfalki AA, et al. SC. Clin Breast Cancer [Internet]. 2018;(2019). Available from: https://doi.org/10.1016/j.clbc.2018.12.013
8. Huang G, Chen R, Lu N, Chen Q, Lv W, Li B. Combined Evaluation of Preoperative Serum CEA and CA125 as an Independent Prognostic Biomarker in Patients with Early-Stage Cervical Adenocarcinoma. 2020;
9. Morris BJ, Hankins CA, Banerjee J, Lumbers ER, Mindel A, Klausner JD, et al. Does Male Circumcision Reduce Women ' s Risk of Sexually Transmitted Infections , Cervical Cancer , and Associated Conditions ? 2019;7(January):1–21.
10. Manuscript A, Onlinefirst P. , Xiao Wang. 2020;
11. Lin Y. Extracellular vesicular Wnt7b mediates HPV E6-induced cervical cancer angiogenesis by activating the β-catenin signaling pathway. :1–27.
12. Rassy E, Pavlidis N. Progress in refining the clinical management of cancer of unknown primary in the molecular era. Nat Rev Clin Oncol [Internet]. Available from: http://dx.doi.org/10.1038/s41571-020-0359-1
13.Hussein, N. M., Atea, A. M., Humide, A. O., Abdullah, Q. K., & Hardan, S. M.. ISOLATION AND DIAGNOSIS OF BACTERIA CAUSING URINARY TRACT INFECTION IN CHILDREN. Systematic Reviews in Pharmacy.2020 11(1), 76-79.
14. Musa, F. H., Khaleel, R. W., & Hussein, N. M. Effect of some plant extracts on the Pyocyanin Production from Pseudomonas Aeruginosa which Isolated from clinical samples. In IOP Conference Series: Materials Science and Engineering .2020.(Vol. 870, No. 1, p. 012041). IOP Publishing
15. Abdullah, Q. K., Sharad, A. A., Hamdi, R. F., Khammas, R. K., & Mohammed Hussein, N. Effect of celiac disease on humoral immune response and some of the blood variables in children. In AIP Conference Proceedings .2020. (Vol. 2213, No. 1, p. 020240). AIP Publishing LLC.