Cardiovascular Effects of Olive, a Qur'anic Fruit: a Systematic Review

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Abstract

Background and Objective: Today, much attention is being paid to the prevention of cardiovascular diseases. In some parts of the world, the rate of cardiovascular disease is low due to a Mediterranean diet containing olive oil. This systematic review examined the verses and traditions in order to express opinions on olive and compare it with the findings of modern medicine.

Methods: This is a qualitative systematic review of studies in which data were collected from Qur'an, traditions, and related articles on the internet, limited to English and Persian and without time limitation by using the keywords *olive, heart disease and Mediterranean diet*.

Results: This systematic review demonstrated that olive in the Quran is a clear sign to scientists. Moreover, its use is recommended in the authentic traditions.

Conclusion: Based on the results, olive has been found to be effective in reducing mortality and preventing cardiovascular diseases.

Key words: Olive oil; Quran; Systematic review.

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Introduction

Quran is the expression of God that has the richest rhetoric and content of words. It contains the most beautiful words that Glorified God has revealed. This book is the best blessing of God which is responsible for guiding and helping human beings. Quran includes all issues relevant to human happiness (Al-Rahman, verses 4-1, Al-Anam, verse 38 and 59; An- Nahl, verse 89). Selecting this viewpoint, the late Allameh Tabatabai has narrated from a hadith that the past and future science until Resurrection is available in Quran. Considering these to be true, the [Tebyan] becomes a rhetorical implication which discovers the secrets that the common understanding has no way to (1).

Thus, he does not deny that various forms of knowledge can be extracted from Quran. This means that although all of the words are not visible in Quran, a generous mind can use gestures, words, and humors from Quran to express the root of all sciences. In other words, the divine verses contain implications of scientific thinking and reasoning to invite and motivate scientific activities and discoveries (2). About six verses in the Quran are directly about olive (Abas, verse 29, Al- nor verse 3, Al-Anam, verse 99, 141; An- Nahl, verse 11; At-Tin verse 1). One points indirectly to the tree that grows on Mount Sinai (Al-Mumenoon verse 20).

[Allah the creator of the olive and the palm]

And He it is Who produces gardens [of vine], trellised and untrellised, and palms and seed-produce of which the fruits are of various sorts, and olives and pomegranates, like and unlike; eat of its fruit when it bears fruit, and pay the due of it on the day of its reaping, and do not act extravagantly; surely He does not love the extravagant (Abas verse 29, Al-Anam verse 141).

And in another verse Allah says:

And He it is Who sends down water from the cloud, then We bring forth with it buds of all [plants], then We bring forth from it green [foliage] from which We produce grain piled up [in the ear]; and of the palm-tree, of the sheaths of it, come forth clusters [of dates] within reach, and gardens of grapes and olives and pomegranates, alike and unlike; behold the fruit of it when it yields the fruit and the ripening of it; most surely there are signs in this for a people who believe (Al-Anam verse 99).

Olive has been mentioned along with a few other fruits:

He causes to grow for you thereby herbage, and the olives, and the palm trees, and the grapes, and of all the fruits; most surely there is a sign in this for a people who reflect (An-Nahl verse 11).

Taking oath by olive by The Almighty God (At-Tin, verse 1) is an indication of the magnitude of this heavenly fruit. Some people have ascribed olive to the era of Adam. It is because the clothing of Adam and Eve in Heaven was from the olive leaves. Moreover, olive has been attributed to Noah (AS) in the last stages of the flood; Noah sent the dove to find dry land underwater and the dove returned with an olive branch. Noah found that the storm had ended and that the land had appeared from under the water and thus the olive branch is considered a symbol of peace and security (3). Quran's description of the olive tree (Al-Noor, verse 35) suggests the abundant benefits of this fruit; it means a continued and permanent blessing (4). Olive is a fruit which is regarded as food and medicine, and if it was not for the benefits of olive except its oil, the virtue of this tree was sufficient in itself (5). Because of it many benefits, according to the Holy Quran, olive oil is even used for generating light and brightness.

Allah is the light of the heavens and the earth; a likeness of His light is as a niche in which is a lamp, the lamp is in a glass, [and] the glass is as it were a brightly shining star, lit from a blessed olive-tree, neither eastern nor western, the oil whereof almost gives light though fire touch it not—light upon light--Allah guides to His light whom He pleases, and Allah sets forth parables for men, and Allah is Cognizant of all things(An-Noor verse 35).

In the above verse olive is holy, auspicious is providing countless blessings. "Olive oil is called" [Zaitoha] "in Arabic language.

Olive from the Perspective of Narratives and Hadiths

Studies have shown that in addition to its fruit and leaf, olive has also great medicinal value. Olive oil is consumed in and along with most foods (5). In our religious texts, the wood of olive tree is known as the prophets' toothbrush (6). Prophet Muhammad (pbuh) said:

How good is olive toothbrush! From blessing tree that makes the mouth fragrant and wipes off plaque. This is my toothbrush and that of previous Prophets (7).

In any case, in addition to the Quran and based on religious texts, olive tree is blessed. The Holy Prophet (SAW) states about olive:

Eat olive oil and anoint your body with it because this is a blessed tree (8).

Imam Ali (AS) has said*: each house has stew with vinegar and olive, because it is prophets' stew* (9). Imam Ali also says:

Anoint bodies with olive oil and make stew with it. Because olive oil is righteous and elect stew, it is sanctified two times, and is blessing, whether at the beginning or at the end of its season and it will not harm any disease.

Imam Reza (AS) says*:*

Eat olive because it empties the bile, and destroys phlegm, strengthens the nerves and moral and removes sorrow (10).

Another hadith from Imam Ali (AS) says:

Olive oil is good food, freshener of mouth and

eliminates phlegm. It brings smoothed and succulent to human face, strengthens the nerves, and eliminates the pain, weaknesses and anger (3).

Imam Sadiq (AS) says:

Olive is a good food, scents the mouth, eliminates phlegm and quenches anger (8).

Furthermore, it has been introduced as the best oil for massaging (11).

Alghama Bin Amer quotes holy prophet (pbuh) saying

"You *get oil from the holy tree of olive. Heal yourselves with it as it cures hemorrhoid*"

"Abu Harira has quoted Prophet Muhammad saying

" Eat olive oil and rub it on the body; it will heal seventy diseases such as leprosy".

Olive Properties

Olive is of genus Oleaceae shrub with perennial dark green leaves whose leaves and fruit can be utilized. In Persian it is named "Ziytoon" and in Arabic" Shajaratozeytoon". 98% of world olive production is from the Mediterranean region (14). In addition to its fruit, the leaves have some properties. Oleuropein-existent in olive leaf- is a potent antioxidant which inhibits the oxidation of low density lipoprotein and can prevent the formation of atherosclerotic plaques (15).Olive oil is mechanically extracted from the fruit of the olive tree (16). Olive oil is the source of at least 30 phenolic compounds (17). Olive oil also contains oleic acid (70%) which is resistant to oxidation (17). Different ways of processing olives bring about virgin, refined, and ordinary olive oil. This categorization is important in understanding the different components of olive oil and its advantages. Virgin olive oil is produced by mechanical or usual pressure under normally mild heat circumstances. With an acidity of less than 0.8 percent, it is called extra virgin olive oil. Extra virgin oil makes up about 10% of the overall olive oil production. The ordinary olive oil is obtained from the combination of virgin and refined olive oil. More than 80 percent of phenolic compounds are lost during purification. Therefore, they exist to a larger extent in virgin olive oil is than the other types. Olive oil has a high content of oleic acid (18) and is the source of at least 30% phenolic compounds (19). Hydroxy Estriol is the main polyphenolic compound and has the highest antioxidant activity compared with other polyphenols (20). In addition, phenolic compounds have anti-inflammatory properties (28) and positive effects on plasma lipoproteins, platelet function and bone health (21).

Methods

This study is considered a systematic qualitative review. The researchers evaluated all accessible documents without sampling methods. All resources of electronic and non-electronic databases were searched for the purpose of data collection. After the exclusion of unrelated full-text articles, two reviewers independently reviewed the selected articles. Finally, these articles were controlled and verified by an expert and authority in the field.

Result

Cardiovascular disease

Cardiovascular diseases are among the most common diseases expected to be the major cause of morbidity and mortality in the world until 2020 (22). Most of cardiovascular disorders are related to atherosclerotic disease and the relationship between plasma lipids and risk of coronary heart disease is well known (17). Based on epidemiological studies, olive oil comprises the main fat in traditional Mediterranean diet (23). Therefore, the rate of coronary heart disease in Mediterranean countries is lower than that in other countries. Furthermore, the overall rate of mortality from cardiovascular disease is lower in people with similar diet than the traditional Mediterranean regimen (24). Mediterranean diet like low-carbohydrate diet can improve renal function in relatively obese diabetic patients and is associated with a lower risk of aging diseases such as dementia (25). Olive oil is a source of polyphenolic antioxidants. Among the natural products which are used for regulating the altered immunologic responses, mention can be made of Polyphenols which are known to have

anti-inflammatory effects in adults and the elderly (23). The benefit of olive oil is mainly related to the presence of large amounts of polyunsaturated fatty acids and components such as tocopherols, carotenoids, and phenols (24). High levels of plasma cholesterol, especially low density lipoprotein is an important factor for coronary artery disease, but olive oil diets reduce mortality from the cardiovascular disease (25). Olive oil markedly reduces oxidation of low density lipoprotein (LDL) (30) and increases HDL cholesterol (26). A meta-analysis of 27 clinical trials found that a Mediterranean diet rich in olive oil can reduce the total cholesterol and LDL (27). Moreover, phenolic compounds can alter the composition of very low density lipoprotein. Some studies have reported decreased levels of apolipoprotein B (28). Smith et al. (2003) found that replacing saturated fatty acids with unsaturated fatty acids reduces platelet aggregation in healthy young subjects (29). A randomized trial showed that a Mediterranean diet rich in olive oil after meals can help prevent worsening of endothelial function (30). Another study showed a protective effect of olive oil on thrombosis (31). Oleic acid is the main fatty acid in olive oil which increases (HDL) and apoproteins A1 and decreases (LDL) and apoprotein B (32). As such, oleic acid may prevent mortality from cardiovascular diseases in industrialized countries (33). Olive oil causes the regression of atherosclerosis in animal models and the development of atherosclerosis by reducing DNA synthesis in smooth muscle cells of human coronary artery (34). In a cohort study on 11,246 patients with acute myocardial infarction, the protective effect of olive oil on mortality was determined (35). In addition, olive oil consumption along with medication can have beneficial effects on coronary artery disease (36). Because olive oil is rich in mono-unsaturated fatty acid, it reduces the risk of childhood obesity. Researchers at the Medical School in Athens University investigated the association between the Mediterranean diet and heart disease. Results showed that the Mediterranean diet may reduce 8 to 45 percent the risk of heart disease (37). A case-control study in Spain showed that adherence to the Mediterranean diet can significantly reduce the risk of the cardiovascular disease. In another study, those with high unsaturated fat intake were associated with higher protection against all causes of mortality, particularly coronary artery diseases (38).

Although the role of Mediterranean diet in the prevention of cardiovascular disease has long been evaluated, its association with cerebrovascular diseases such as stroke has not been studied amply. In Kastorini's study (2011), the relationship between the Mediterranean diet and the development of ischemic stroke was investigated. This study demonstrated the protective effect of the Mediterranean diet on risk of ischemic stroke (39). Féart (2011) examined the association between the Mediterranean diet and disability in daily activities. The results showed that this diet can contribute to slowing down of disability process (40).

Hypertension

Hypertension is the risk factor for coronary artery diseases whose oxidative stress has been known in its etiology (41). Although studies have shown the effect of olive oil on cardiovascular disease especially in reducing the blood pressure (42), not all epidemiological studies have indicated a correlation between fat intake and high blood pressure. Perona (2004) found that a diet containing olive oil is beneficial in reducing systolic blood pressure in older patients (43). A cross-sectional study also revealed that Italian men have few cases of hypertension (44). In most clinical trials, no differences were observed in people with normal blood pressure during a Mediterranean diet. However, only one clinical trial showed more reduction in blood pressure in healthy individuals who were in the first stage of National Cholesterol Education Program (a diet rich in olive oil) (45). In another clinical trial, people who were accustomed to a Mediterranean diet had a significant increase in blood pressure after the administration of a diet rich in saturated fats (46). The results of a crossover clinical trial on 23 patients with hypertension under various diets during one

year showed significant reduction of need for antihypertensive medications. This study indicated that although olive oil may not have any transparent effect on people with normal blood pressure, it can have significant benefits to patients with hypertension (47).

Discussion & Conclusion:

Consumption of olive oil is known as a key factor in supporting the beneficial effects of the Mediterranean diet. Olive oil used by people of the Mediterranean for centuries as a food, drug, and cosmetic has been the subject of scientific interest in the last few decades. Its biological, therapeuticall and nutritional uses have been approved. Currently, according to the evidences of numerous epidemiological and clinical investigations, the awareness of olive oil as a source of food and medicine has been acknowledged. Its antioxidant, antimicrobial, anti-inflammatory and anti-tumor effects are manifest in numerous studies. From ancient times, the olive -because of its numerous benefits -has formed part of the human diet, not to mention its many functions. In countries in which olive oil is the main source of dietary fat, the risk of coronary heart disease and mortality has been found to be lower. Although it is assumed that there is a particular combination in pseudo-Mediterranean diets such as oleic acid which contributes to its beneficial effects, recent studies show that non-fatty acid components of olive oil (e.g. certain phenols) have useful biological activities that may play a role in reducing the risk of coronary heart disease. For this reason, pure or natural virgin olive oil may be healthier than other foods and oils rich in unsaturated fats.

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