



Beer Consumption: Health Effects

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Abstract

Background: Beer is one of the most seasoned and most broadly expended alcoholic beverages on the planet and is the third most commonly consumed drink after water and tea world over.

Aim: The aim of this review article was to study the health effects of beer consumption and compare the positive effects of consumption of wine, beer and spirits when consumed in moderation.

Methods: Literature was searched in the form of epidemiological studies, prospective studies and clinical trials and the health effects of different alcoholic beverages were studied and compared when consumed in moderation. Moderate consumption of beer was defined as non bingeing utilization of 1 beverage for every day in ladies and upto 2 beverages for each day in men.

Conclusion: Although alcohol consumption is a two-sided coin, moderate alcohol consumption in the form of wine or beer has been shown to have a protective role for the cardiovascular system and in addition to being anti-carcinogenic. Both wine and beer consumption in moderation have been associated with health benefits, but to a lesser degree with beer as compared to that of wine, probably because of beer's lower phenolic content. Healthy effects of wine and beer are greater in combination with a healthy diet. The main protective effects on the cardiovascular system and cancer resulting from moderate wine and beer intake is mainly due to their common components, alcohol and polyphenols. The general recommendations are one drink (150mL of wine or 10g of alcohol) daily for women and two drinks (300mL of wine or 20g of alcohol) daily for men.

Keywords: Beer; Alcohol; Wine; Spirits; Moderate consumption; Xanthohumol

Introduction

Doctors ought to know about the developing proof supporting the dietary and medical advantages of moderate utilization of alcohol as a component of a sound way of life. Beer is one of the most seasoned and most broadly expended alcoholic beverages on the planet and in America it adds to 55.3% of the liquor devoured. It is the third most commonly consumed drink after water and tea world over. Beer is fermented from oat grains-most usually from malted grain, however wheat, maize, and rice may likewise be utilized. Moderate, non-bingeing beer utilization as 1 beverage for every day in ladies and upto 2 beverages for each day in men, diminishes the danger of cardiovascular ailment. This impact is like that of wine, at similar alcohol amounts [1]. The strength of current brew is more often than not around 4% to 6% alcohol by volume (ABV), in spite of the fact that it might differ somewhere in the range of 0.5% and 20%.

A big No!

Consumption of beer, at any measurement isn't prescribed for youngsters, teenagers, pregnant ladies, people in danger to

create liquor abuse, those with cardiomyopathy, cardiovascular arrhythmias, depression, liver and pancreatic illnesses or anybody occupied with activities that require fixation, aptitude or coordination [1].

Wine

The off late affirmed willful mark on wine saying that "The proud people who made this wine encourage you to consult your family doctor about the health effects of wine consumption" suggests that doctors ought to advance wine as the favored wellspring of dietary alcohol. However, studies evaluating the relative benefits of wine versus beer versus spirits suggest that moderate consumption of any alcoholic beverage is associated with lower rates of cardiovascular disease. From a nutritional standpoint, beer contains more protein and vitamin B complex than wine [2]. The antioxidant content of beer is equivalent to that of wine, but the specific antioxidants are different because the barley and hops used in the production of beer contain flavonoids different from those in the grapes used in the production of wine [2]. Wine has a long history of use as a medicine making it the world's oldest documented human made

medicine and is recommended as an antiseptic for treating wounds, a digestive aid, for lethargy, diarrhoea and as an analgesic for pain from childbirth [3]. The risk of colon cancer, prostatic cancer and breast cancer can be reduced by consuming moderate amounts of wine and has been proven to have positive health effects in patients with diabetes mellitus and cardiovascular diseases [3].

Arterial Stiffness

Increased arterial stiffness has been identified as an independent risk factor for future cardiovascular disease [4]. Epidemiological examinations uncover a J-shaped relationship between liquor utilization and blood vessel stiffness, with blood vessel hardening lower among mild-to-moderate consumers than overwhelming consumers or non-drinkers [5]. The changes in arterial stiffness are generally thought to result from structural changes (i.e., elastin and collagen content), functional changes (i.e., sympathetic nervous activity, vasoactive substances), or a combination of both [6]. Consumption of alcoholic beverages in excess of the mild-to-moderate level is known to elicit a reduction in arterial compliance, which means an increase in arterial stiffness [7].

Pattern of drinking and type of alcoholic beverage

Moderate drinkers have a lower risk of developing coronary heart disease and less mortality compared to both heavy drinkers and abstainers, heavy drinkers being the ones with the highest risk [8]. Mukamal et al. reported that alcohol intake distributed over the week inversely associates with the risk of myocardial infarction independently of the type of beverage or the proportion consumed with meals [9]. Some studies supported the benefits of wine on cardiovascular outcomes and mortality and depicted that a J-shaped relationship was found in wine, but neither in beer nor spirits [10]. A recent study reported by Costanzo et al. provided evidence that the J-shaped association is found in both wine and beer, but not in spirits [11]. Fermented beverages, both wine and beer are rich in antioxidants, mainly polyphenolic compounds [12], that are missing in spirit beverages.

Mechanism of action

A number of studies and clinical trials have suggested that alcoholic beverages may exert different protective effects against atherosclerosis development either by modulating lipid metabolism, platelet activity, inflammation, and thrombogenic factors [13]. Specific interest focuses on fermented alcoholic beverages such as wine or beer wherein epidemiological evidence and results from prospective clinical trials suggest that these beverages with heterogeneous content of non-alcoholic components might confer better cardiovascular protection than spirits [1,14].

How much is too much!

Epidemiological and clinical studies have pointed out that moderate consumption of beer viz one glass a day for females and two glasses a day for males, is associated with decreased incidence of cardiovascular disease (CVD), hypertension, diabetes, and certain types of cancer, including colon, basal cell, ovarian, and prostate carcinoma. Excessive intake has been associated with hypertension and atrial fibrillation [15].

Content

Beer is rich in nutrients such as carbohydrates, amino acids, minerals, vitamins and other compounds such as polyphenols. Hop (*Humulus lupulus* L.) is one of the raw materials of beer which serves as an important source of phenolic compounds. Dried hop cones contain about 14.4% of polyphenols, mainly phenolic acids, prenylated chalcones, flavonoids, catechins and pro-antocyanidins [16]. Around 30% of polyphenols from beer comes from hops and 70%–80% originates from malt [17].

Given a choice!

A recent meta-analysis including a parallel and separate evaluation of wine and beer consumption indicated a similar protective effect for beer and wine against cardiovascular risk [18]. On the contrary, no statistically significant association with vascular events was apparent for the intake of spirits- the type of alcoholic drink with the highest alcohol concentration and the lowest polyphenolic concentration- suggesting that the polyphenolic constituents found in wine or beer could be responsible for the beneficial effect of alcoholic beverages on vascular events [19]. Results of another study reveal that moderate consumption of alcoholic drinks with a high alcoholic grade (liquors and distillates) also has a cardio-protector effect [20] explaining the fact that part of the beneficial effects of alcoholic beverages is largely due to ethanol, and not to the other specific components of each type of drink.

Anti-cancer role

Xanthohumol is the best studied anti-carcinogenic present in beer which acts by inhibiting the metabolic activation of pro-carcinogens, detoxifying enzyme inducers of carcinogens [21]. Other compounds in beer with anti-carcinogenic capacity are 8-prenilnaringenin, isoxanthohumol and other prenylflavonoids, as well as the flavanones, humulones and proantocyanidins [22].

Conclusion

Although heavy and excessive beer consumption exerts deleterious effects on the human body, with increased disease risks on many organs and is associated to significant social problems such as addiction, accidents, violence and crime, literature shows no harm with moderate beer consumption for major chronic conditions and some benefit against cardiovascular disease [1]. The main protective effects on the cardiovascular system and cancer resulting from moderate wine and beer intake is mainly due to their common components, alcohol and polyphenols.

It must be emphasized that the benefits associated with wine and beer are dependent upon moderate consumption. The general recommendations are one drink (150mL of wine or 10g of alcohol) daily for women and two drinks (300mL of wine or 20g of alcohol) daily for men. These different recommended daily doses of alcohol between genders are explained by the fact that women are more sensitive to the effects of alcohol on the body.

Healthy effects of wine and beer are greater in combination with a healthy diet. The health benefits associated with the

Mediterranean diet, which combines moderate wine and beer consumption with a diet rich in fruits, vegetables and whole grains, suggests that polyphenols have synergistic effects with compounds found in other groups of foods.

There is no evidence to support endorsement of one type of alcoholic beverage over another [2]. However some studies have revealed that although both wine and beer consumption in moderation have been associated with health benefits, but to a lesser degree with beer as compared to that of wine, probably because of beer's lower phenolic content.

Although alcohol consumption is a two-sided coin, moderate alcohol consumption in the form of wine or beer has been shown to have a protective role for the cardiovascular system and in addition to being anti-carcinogenic. American Heart Association recommends that heavy drinkers or alcohol abstainers should not be encouraged to drink wine for health reasons.

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