



Advantages and Disadvantages of Alcoholic Beverages; What Is the Opinion of the Holy Quran?

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ABSTRACT: The all Knowing God states in the Quran: "They ask you (O Muhammad, peace be upon him) about wine and gambling. Say, in them is great sin and some benefit for people, but their sin is greater than their benefit". More than 1400 years ago, this patrician verse had been revealed to the prophet Mohammad and undoubtedly mankind at that time had been unaware about alcohol disadvantages. Based on the scientific documents, it seems that until 200 years ago, human didn't know anything about disadvantages of alcohol and its harmful effects on body and nous. This study has reviewed the scientific achievements about the effects of alcoholic beverage on body and mind and compared them with the opinion of the Quran verse about alcoholic beverages. Regard the numerous scientific reports from harmful effects of alcoholic beverages, the miracle of Holy Quran about the advantages and disadvantages of this substance could be explained.

KEYWORDS: Advantages, Disadvantages, Alcoholic beverages, Quran

INTRODUCION

Alcoholic beverage is one of the most multipurpose drugs known to mankind, with multiple direct effects on neurochemical systems (Strohle et al., 2012). Alcohol is consumed by a large majority of people in the Western world because of naturally produced and easy to manufacturing, and reinforcement effects, and is likely to contribute to more morbidity, mortality, and public health costs than all of the illegal drugs (Ryden et al., 2012).

The use of alcoholic beverages existed at least as early as 10,000 BC. The Greeks, Romans, and Babylonian are first culture which used alcohol for religious festivals, pleasure, as a source of nutrition and part of medicinal practices. Nowadays alcoholic beverage incorporated into most cultures, and has a central role in daily life (Hanson, 1995). Whiskey, champagne, distilled spirits, gin and win are the most alcoholic beverage that have been used through the world (Beyeler, 2011).

The Holy Quran, the central religious text of Islam which is the verbatim word of God, states its opinion about alcohol: "They ask you (O Muhammad, peace be upon him) about wine and gambling. Say, in them is great sin and some benefit for people, but their sin is greater than their benefit" (chapter 2, verse 219).

This patrician verse had been revealed to the prophet Mohammad in more than 1400 years ago and undoubtedly the human had been unaware about alcohol disadvantages at that time. Based on the scientific documents, it seems that until 200 years ago, human didn't know anything

about disadvantages of alcohol and its harmful effects on body and nous.

The first recognition and reports of dangerous consequences of heavy consumption in alcoholics were noted in India, Greece, and Rome. In 1800s, use of ethanol has been increased with industrialization of alcohol production (Faden, 2006). Recently, drinks of alcoholic beverage have been widespread, with an average age of first use of ~15 years in most Western countries. The annual costs of alcohol dependence and abuse was estimated to be \$185 billion in the U.S. in recent years, and this drug contributes to 100,000 deaths per year in the U.S. alone, including as many as 20,000 alcohol-related fatal car accidents annually (Lewis and Hession, 2012). Thus, optimal medical care in modern medicine is greatly affected by the use of alcohol, because of adversely affecting many body systems, interacting with medications and other drugs (Harwood et al., 1999).

Effects of Ethanol on Physiological Systems CNS

Ethanol affects nearly all brain systems and causes rapid adaptation, changes in neurochemical pathways and these alterations often are associated with morbidity (Bahi, 2012). Alcohol disturbs the balance between excitatory and inhibitory events in the brain, resulting in anxiolysis, ataxia, and sedation (Dar, 2011). Ethanol probably produces its effects by changing the function of a number of ligand-gated and voltage-gated ion channels and GPCR (G-protein coupled receptors) systems. The primary

mediators of inhibitory neurotransmission in the brain are the GABA_A receptors, in which ethanol markedly enhanced their effects. Indeed, ethanol results in GABA release and the pattern of expression of genes impacting on GABA_A subunits alters in chronic heavy users (Li et al., 2011).

The nicotinic acetylcholine (ACh) receptor is also sensitive to the effects of ethanol. Drinking acutely increases ACh in the ventral tegmental area, with a subsequent increase in dopamine neurotransmitter in the nucleus accumbens which causes reinforcement phenomenon. Ethanol also inhibits the function of the glutamate receptor subtypes (Hendrickson, 2011).

There are a diverse range of effects from ethanol that reflecting changes in the GABA system which causes CNS depression. Large doses of ethanol can produce anterograde amnesias, commonly referred to as *alcoholic blackouts*. At even 2-3 drinks, ethanol can produce disturbances in sleep. Heavy ethanol consumption produces next morning syndrome with symptom of headache, thirst, nausea, and cognitive impairment (Wetherill, 2012).

Chronic heavy drinking develops a more permanent cognitive deficit that referred to as *alcoholic dementia* (Alfonso-Loeches and Guerri, 2011). Wernicke-Korsakoff syndromes causes by thiamine depletion following heavy ethanol digestion. Atrophy of the cerebellar vermis and a peripheral neuropathy are the others neurological syndromes associated with chronic heavy use of alcohol (Matsushita, 2014).

Cardiovascular System

Alcohol consumption more than three standard drinks per day elevate the risk for heart attacks and bleeding-related strokes. Actually, early causes of death in alcohol-dependent individuals are vascular-related diseases. The risk of coronary artery disease, cardiac arrhythmias, and an elevated rate of congestive heart failure are elevating following heavy ethanol consumption (Hens and Dambrink, 2012).

Intake of saturated fat causes elevation of serum cholesterol levels which is correlated with the risk of mortality due to coronary heart disease. France is an exception, despite the consumption of high quantities of saturated fats mortality from CHD is low (the "French paradox"). It has been suggested that wine consumption is one of the cardio protective factors (Lippi, 2010). But, heavy consumption of alcohol leads to an increased incidence of non-coronary causes of cardiovascular failure, such as arrhythmias, cardiomyopathy, and hemorrhagic stroke, offsetting the beneficial effects of alcohol on coronary arteries (Chetreau and Iliescu, 2009).

Alcohol could increase plasma lipoprotein levels, particularly increases in high-density lipoprotein (HDL), which have been associated with the protective effects of ethanol (Wakabayashi, 2012). The studies have been

showed that increases in HDL-cholesterol could antagonize cholesterol accumulation in arterial walls, reducing the risk of myocardial infarction. Also the flavonoids that found in red wine may have an additional antioxidant effects which protecting low-density lipoprotein (LDL) from oxidation. Oxidized LDL has been associated with atherogenesis (Chetreau et al., 2010). Another mechanism in which alcohol could show a cardioprotective property is altering factors involved in blood clotting. Alcohol consumption elevates the levels of tissue plasminogen activator, decreases fibrinogen concentrations and inhibits platelet activation (Pomp et al., 2008).

Heavy alcohol digestion can cause hypertension with raises in diastolic and systolic blood pressure (Taylor et al., 2009).

Pharmacological effects of alcohol on cardiac rhythm are included QT interval prolongation, atrial arrhythmias, supraventricular tachycardia, atrial fibrillation, and atrial flutter. Ventricular tachycardia can increase risk of sudden death. These arrhythmias may be resistant to cardio version, digoxin, or Ca²⁺ channel blocking agents (Subramanian, 2012).

Ethanol has toxic effects on both skeletal and cardiac muscle. Numerous studies have shown that alcohol can depress cardiac contractility and lead to cardiomyopathy (ja et al., 2012).

In persons who drink more than 40-60 g alcohol per day, incidence of hemorrhagic and ischemic stroke has been increased (Ohsawa and Tanno, 2012).

Skeletal Muscles

Decreasing in muscle strength has been seen by chronic, heavy and daily alcohol consumption. Heavy doses of alcohol can also cause irreversible damage to muscle which is marked by increase in the activity of plasma creatine kinase (Pruznak, 2012).

Kidneys

Alcohol has diuretic effect by inhibiting the release of vasopressin from the posterior pituitary gland. In people who are dependent to alcohol, urine output is less than control subjects suggesting that tolerance develops to the diuretic effects of ethanol (Hillemaacher et al., 2009).

Gastrointestinal System

Esophageal dysfunction, barrett's esophagus and traumatic rupture of the esophagus have been seen following heavy alcohol consumption. In stomach, heavy alcohol use can disrupt the gastric mucosal barrier and cause acute and chronic gastritis (Thrift et al., 2011).

Chronic alcohol digestions result in malabsorption in the small intestine. The major symptom is frequent loose stools. The rectal fissures and *pruritus ani* that frequently are associated with heavy drinking probably are related to chronic diarrhea (Daniel et al., 1994). Alcohol

beverage usage is the most common causes of both acute and chronic pancreatitis in the world (Masamune and Shimosegawa, 2012). Some studies have been showed that uses of medicinal plant with anti-inflammatory and antioxidant properties could prevent from induction and progression of acute pancreatitis in an animal model of pancreatitis (Abed et al., 2012; Minaiyan et al., 2012).

Fatty infiltration of the liver, hepatitis, and cirrhosis may occur by alcohol usage (Bellentani et al., 1997). This accumulation results from inhibition of both the tricarboxylic acid cycle and oxidation of fat (Das and Vasudevan, 2006).

Molecular mechanisms for alcoholic cirrhosis are included decrease in phosphatidylcholine levels in hepatic mitochondria, a change associated with decreased oxidase activity and O₂ consumption. Moreover ethanol can increase formation of intracellular free hydroxy-ethyl radical (Lieber et al., 1997).

Depletion of the vitamins B, particularly thiamine causes peripheral neuropathy, Korsakoff's psychosis, and Wernicke's encephalopathy (Jung et al., 2012). The chronic consumption of ethanol causes an oxidative stress on the liver. The antioxidant effects of vitamin E may ameliorate some of this ethanol-induced toxicity in the liver (Lieber, 2004).

Sexual Organ

Both acute and chronic alcohol use can cause impotency in men, decreased sexual arousal, increased ejaculatory latency, and decreased orgasmic pleasure (Christensen et al., 2011).

Fetal alcohol syndrome is a dysmorphology pattern that has been displayed in children born from alcoholic mothers. This teratogenic effect is included a complex of craniofacial abnormalities, CNS dysfunction and pre- and/or postnatal stunting of growth (Boyles et al., 2010).

Hematological and Immunological Systems

Chronic alcohol consumption is associated with some anemia. Microcytic and Macrocytic anemia and increases in mean corpuscular volume may occur in the absence of vitamin deficiencies. Normochromic anemia also can occur because of chronic effects on hematopoiesis. In the presence of severe liver disease, morphological changes including the development of burr cells, schistocytes, and ringed sideroblasts (Fujioka, 1997).

DISCUSSION

Undoubtedly, alcoholic beverages have been used for merry purpose and also in religious ceremony from ancient until now. Romans, Egyptians, Babylon and the other nations have been users of alcohol without any knowledge about disadvantages of this potable (Hanson, 1995). God introduced wine as a harmful substance and expressed its disadvantages is more than benefits more

than 1400 years ago in holy Quran. So that usage of wine is great sin in Islam. However until 2 centuries ago, complications of alcohol usage were not known. It has been revealed that this substance has numerous dangerous effects. Irreversible effects such as changing in neurotransmission pathways in brain, cardiomyopathy, and disturbance in mental balances have been proven (Saunders et al., 1993).

Now there is a question. Should abstainers from alcohol be advised to consume ethanol in moderate amounts? There have been no randomized clinical trials to test the efficacy of daily alcohol use in reducing rates of coronary heart disease and mortality, and it is not rational for physicians to advocate alcohol ingestion solely to prevent heart disease. Many abstainers avoid alcohol because of a family history of alcoholism or for other health reasons, and it is imprudent to suggest that they begin drinking. Other lifestyle changes or medical treatments should be encouraged if the patients are at risk for the development of CHD (Hardman et al, 2011).

Various dangerous effects of ethanol such as barrette esophagus, hepatotoxicity, peripheral neuropathy, Korsakoff's psychosis, Wernicke's encephalopathy, teratogenicity and etc reveal its disadvantages.

CONCLUSION

In summary, it can be concluded that despite the presence of some advantages in alcohol consumption such as in prevention of coronary heart disease, alcohol is detrimental to health because of numerous dangerous effects. These disadvantages of ethanol is more than its benefit, as mentioned in holy Quran and certainly this fact confirmed the scientific miracle of the holy Quran.

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