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Impact of Alcohol Consumption upon Ischemic Heart Disease: Comparative Study

Hakemia Shakir Hassan, PhD

Professor, Adult Nursing Department, University of Baghdad College of Nursing. Iraq.

ABSTRACT

Objective: the aim of the study is to evaluate the effectiveness of alcohol consumption on the ischemic heart disease

Methodology: An descriptive design was used to carried out this study in medical ward at Ibn Al-Biter Specialized Center for Cardiac Surgery for the period from October 2022 to April 2023. The size of sample was 50 Ischemic Heart Disease patients divided into two groups each one consisted of 25 patients as control group and study group. The study group was drinking alcohol while the control group was not drinking alcohol. The study instrument consisted from four parts, socio – demographic data; Clinical Characteristics data; Assessment of Alcohol Drinking forma and Assessment for IHD was performed by Echo cardiograph

Results: The results of the study presented left ventricular function scores for the none drinking group remained essentially the abnormal less than normal while the left ventricular function scores for the drinking group remained essentially the normal less than abnormal

Conclusion: Increasing alcohol intake is associated with subtle alterations in cardiac structure and function

Recommendations: more research is needed to better understand the effects of alcohol consumption on the CV systems of older populations.

KEYWORD: Alcohol; Ischemic Heart Disease

ARTICLE DETAILS

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INTRODUCTION

Cardiovascular disease (i.e., cardiovascular disease) is a leading cause of illness and disability in the United States. Heart disease is the leading cause and stroke is the third leading cause of death among adult Americans. Together, these two conditions account for more than 40 percent of all deaths annually (1). Alcohol consumption is causally linked to approximately 100 diseases and conditions, and has been found to be one of the most important risk factors for the burden of disease worldwide, especially in developed countries (1). One of the most important alcohol-related morbidities is ischemic heart disease (IHD), which is the most common cause of death in many countries, with increasing importance from a global perspective (2). However, the relation between alcohol consumption and IHD is complex. Although light to moderate regular consumption has been associated with beneficial effects on ischemic heart disease (3). However, intake of three or more drinks per day clearly increases the risk of ischemic stroke, and heavier drinking may well increase the risk of myocardial infarction (2, 3). The effect of heavy drinking occasions is less clear. It has been particularly questionable whether light to moderate drinking, on average, combined with occasional heavy drinking, will result in a cardio protective effect, a deleterious effect, or no effect. in comparison to either moderate drinking or abstention. The answer to this question is further complicated because the concept of irregular binge or heavy drinking is not uniformly defined (4, 6).

One of the most important disease outcomes causally related to alcohol is ischemic heart disease (IHD), the most

METHODOLOGY

Design of the Study

A descriptive design was accomplished in order To determine the effectiveness of alcohol consumption on the ischemic heart disease The study was carried out during the period between October 2022 to April 2023.The study is applied in Ibn – Albitar Centre for Cardiac Surgery.After ethical approval gated from College of Nursing in University of Baghdad , Ministry of Health agreed of ethical consideration of the research ,Each participant in the study signed an agreement to participated in the study .Non - probability (purposive) sample was selected 50 IHD patients divided into two groups each one consisted of 25 patients as control group and study group. The study group was drinking alcohol while the control group was not drinking alcohol who were systematically selected one by one from those admitted to the medical ward. Each had a full history and clinical examination including assessment of coronary artery risk factors for the following criteria :(1) Patients who agree to participate in the study. (2) Adult patients whose ages ranged from 20 to 79 years old. (3) No educational levels are defined. (4) Full cardio logical assessment including ECG, and Echocardiography was performed. All these tests were performed at Ibn Al-Bitar Specialized Center for Cardiac Surgery**.** The revision was made on the contents based on these experts' recommendations and suggestions. The experts have agreed that the forma able to improve the assessment alcohol consumption upon ischemic heart disease. To achieved and measured the objectives of the study the researcher has constructed the study instruments based on the review of the relevant literature and previous study. The study instrument consisted of four parts, socio – demographic data ;Clinical Characteristics data; Assessment of Alcohol Drinking forma.(using categorical drinking status in the past 12 months by asking all participants whether they consumed any alcoholic beverage within the past 12 months and, if so, how frequently 1-5 times per week; 6-10 times per week and 11-15 times per week; drinking Barr or wine; alcohol consumption included former drinker ; reducer former drinker and current former drinker ; glass per week which included 8 glass per week;11 glass per week; 15 glass per week; 18 glass per week ;23 glass per week with each glass providing 5 oz or 150 ml of wine, which is 12% alcohol. In calculating the amount of alcohol consumed (in grams per week), it was assumed that one glass would be the equivalent to 14 g of pure alcohol .Alcohol use was defined as the consumption of ≥1 alcoholic beverage within the previous 12 months. and Assessment for IHD was performed by Echo cardiograph and were visually analyzed by two experienced cardiologists. Data collected in the period of three months from 11th of October 2022 to 6th of Junuary2023, Data were collected by using the questionnaire, structured interview technique and review of the patients' records. The two groups have the same demographic characteristic. Each patient was interviewed personally by the investigator. Throughout each interview, an explanation of the study was held up with the patient in order to obtain his acceptance for participation and responses. Each interview took approximately from (25-30) minutes. Statistics were used to analyze the findings of the research by using (SPSS) version (25). It includes (frequencies, percentages, mean score, standard deviation, relative sufficiency, reliability coefficient)

Results: Table.1. Showed that the mean of age 54.67∓10.717 in the non-drinking alcohol group and 55.30∓11.265 of patients in the drinking alcohol group. Concerning the educational level, the majority (%32) of patients in the non-drinking alcohol group are primary school graduate and the same percentage in the non-drinking alcohol group are primary school graduate. Related to monthly income, majority have salary (300,000-600,000,) of patients in the non-drinking alcohol group are (%) and (%) of patients in the drinking alcohol group. Table.2. Showed that the majority (%) of patients who have diabetic patients in the non-drinking alcohol group and (%) of patients in drinking alcohol groups are not-smoking. The results of this study also show that (%48) of patients in the non-drinking alcohol group and (% 40) of patients in drinking alcohol groups are not-smoking suffer from hypertension. As a visual display ıs gıven of the relationship of the Left Ventricular Function scores (Figure. 1), Left Ventricular Function scores for the None Drinking group remained essentially the abnormal less than normal while for the Drinking group, the Left Ventricular Function scores for the Drinking group remained essentially the normal less than abnormal. As a visual display ıs gıven of the relationship of the Ejection Fraction scores (Figure.2), Ejection Fraction scores for the None Drinking group remained essentially the abnormal less than normal while for the Drinking group, the Ejection Fraction scores for the Drinking group remained essentially the normal less than abnormal.

Table (1): Distribution of the Participants According to their Socio Demographic Data Characteristics:

Variable	Groups	Non-Drinking Alcohol		Drinking Alcohol	
		.Freq	%	Freq	%
	18-28	**3**	12	0	0
	29-38	**3**	12	**5**	20
	39-48	**5**	20	**6**	24
	49-58	**7**	**28**	**7**	**28**

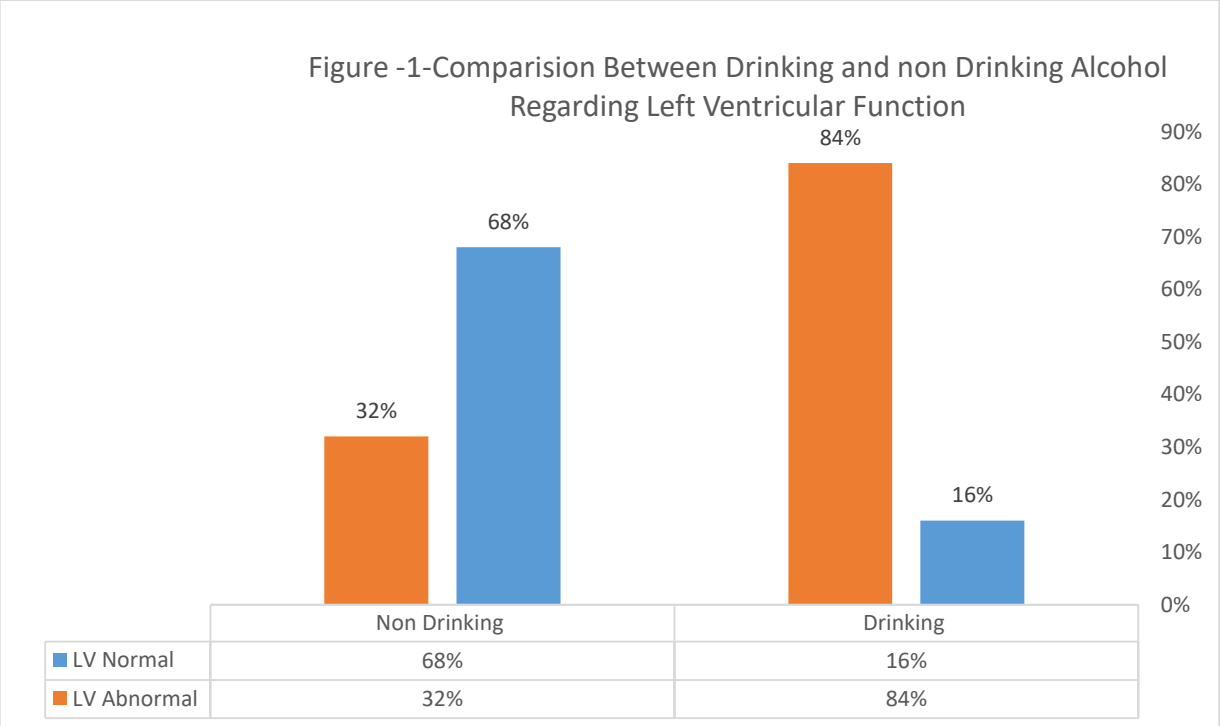
Age Groups	59-68	7	28	7	28
	Total	25	100	25	100
	.D .S ∓ x	54.67∓10.717		55.30∓11.265	
level of Education	Illiterate	2	8	3	12
	Read and write	6	24	4	16
	primary school	8	32	8	32
	Intermediate school	4	16	5	20
	Secondary school	3	12	3	12
	College	2	8	2	8
	Total	25	100.0%	25	100.0%
Household monthly income	300,000-600,000	12	48	10	40
	601.000-900.000	8	32	7	28
	901.000-1.200.000	3	12	5	20
	1.201.000-1.500.000	2	8	3	12
	Total	25	100.0%	25	100.0%

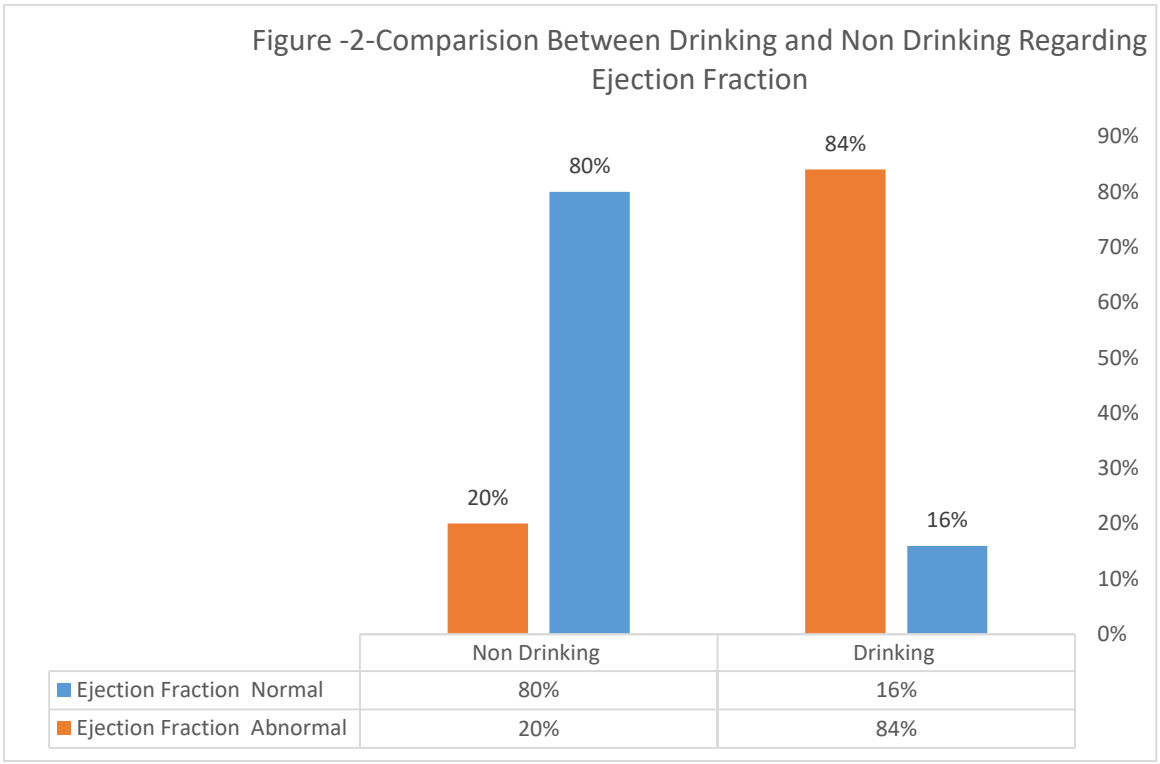
F= frequencies, %=Percentages, M = Mean, S.D = Standard Deviation

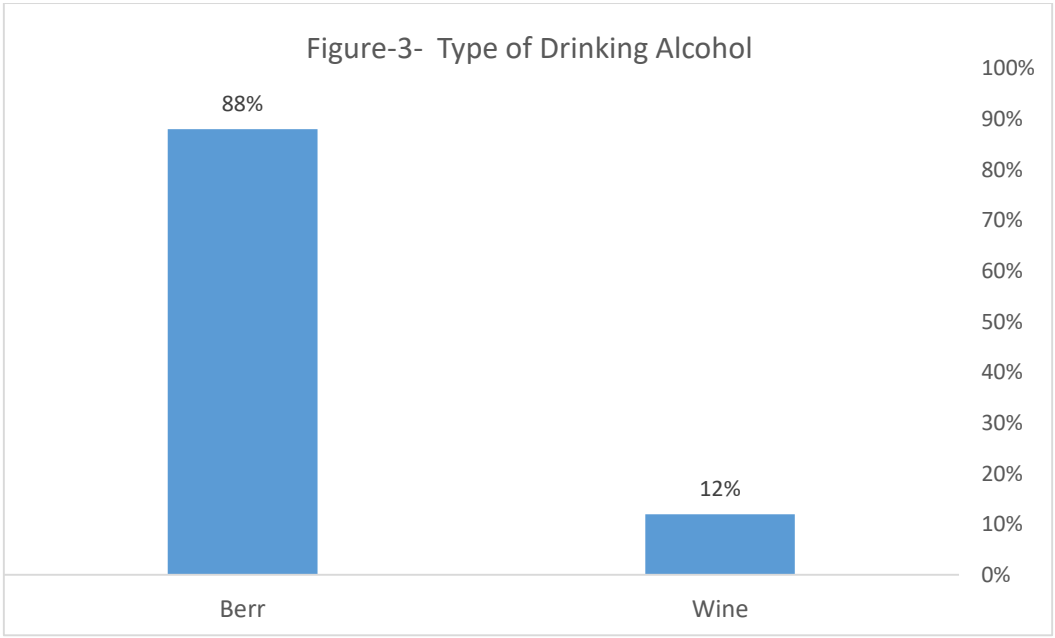
Table (2): Distribution of the Participants According to their Clinical Data

Variables	Groups	Non-drinking		Drinking	
		Freq	%	Freq	%
Past Medical History	Hypertension	3	12	17	68
	kidney problems	3	12	2	8
	Diabetic Mellitus	2	8	9	36
	Liver Problem	8	32	8	32
Past surgical History	Renal Stone	7	28		
	Appendix	0	0	7	28
	Hernia	0	0	7	28

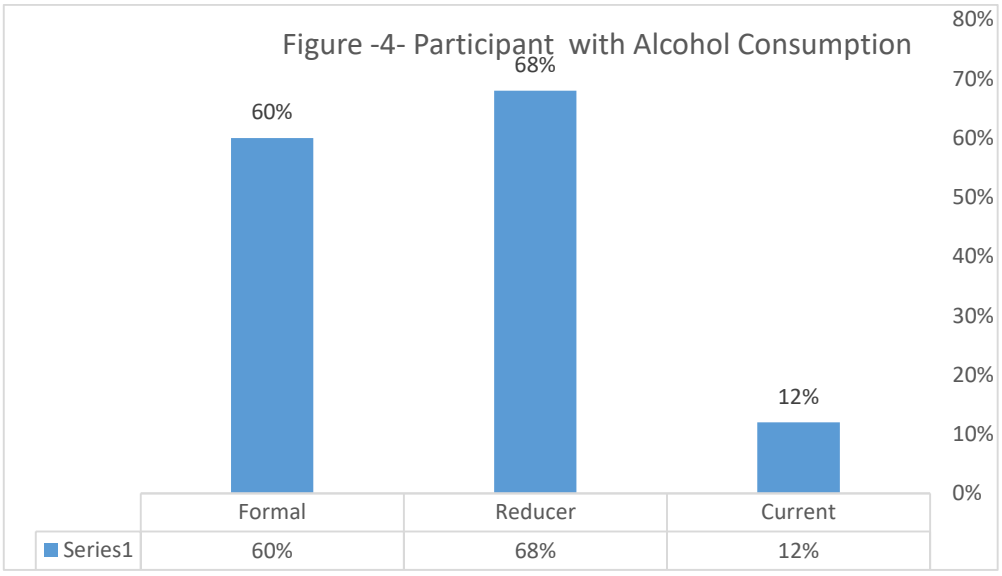
F= frequencies, %=Percentages, M = Mean



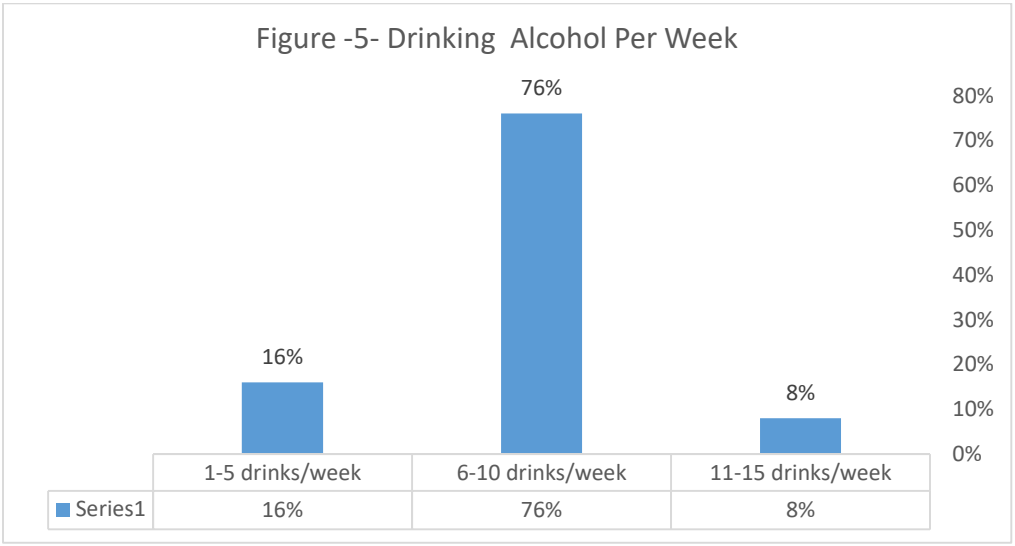




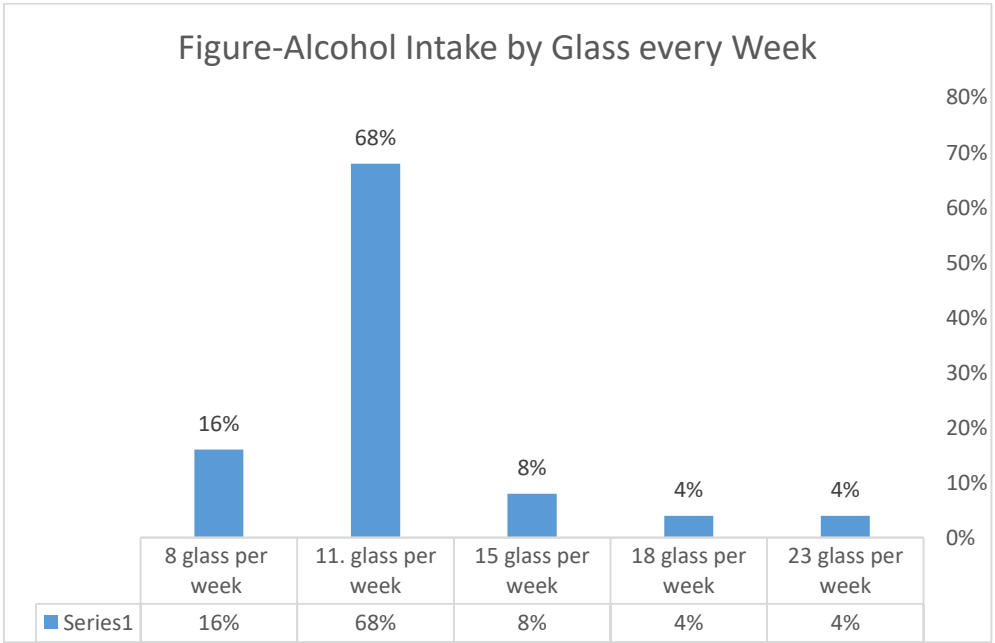
This figure showed that the Iraqi patient is drinking Barr more than wine



This figure showed that the alcohol consumption more in formal drinking than current drinking



This figure showed that the high number of Iraqi patient with alcohol intake 6-10 times drinks alcohol per week



This figure showed that the high number(68% out of 100) of Iraqi patient with alcohol intake 11 glass per week

DISCUSSION

This study uses a purposive clinical design to test the effectiveness of alcohol consumption upon ischemia heart disease. The sample consists of (50) patients who were purposively allocated to either non drinking alcohol group (n=25) or drinking alcohol group (n=25).The mean and stander deviations for age of the patients was (54.67∓10.717) years for the non-drinking alcohol and (55.30∓11.265) years old for the drinking alcohol group which ranged from (18-68) years old This sample assignment covered a wide variety of patients in alcohol consumption upon ischemia heart disease. (Table 1). The current study is consistent with (6,7,8)) who report that half of (212, 51.5%) the patients were aged between 41-60 years while133 (32.3%) were aged less than 40 years. (9-11) reported that the highest age group (37.3%) of patients was 61-70 years and that with the least number of patients was 11-20 years and 81-90 years. Results of this study showed that 8(32%) of patients in the drinking alcohol group who are primary school graduate and the same percentage of patients in the non-drinking alcohol group were primary school graduate (Table.1). These results agree with study by (8) reported that (56.5%) patients were illiterate but did not achieve matriculation and 42 (21%) patients have qualified matriculation or above educational levels(12-14) reported that 33.02 % of individuals were educated up to secondary level, 23.23% were graduated and educated above and 20.95% of patients were studied up to primary level. This study revealed that monthly income, majority have salary (300,000-600,000,) of patients in the non-drinking alcohol group groups are 12 (48%) and 10 (40%) of patients in the drinking alcohol group . The results of this study showed that,3 (12%) of patients in non-drinking alcohol group and 17(68%) of patients in drinking alcohol group who have history of hypertension. However the study of, (11;12) reported that one or more comorbidities were present in 172 (71.66%) patients and hypertension detected in 126 (52.5%) patients was the commonest comorbidity. While, Dahal (2017) reported that 53.44% of patient had concomitant hypertension and 9.16% of patient had nephropathy along with new diabetic cases.Several studies (15-16) and meta-analyses have been conducted to determine the relationship between alcohol consumption and the risk of developing heart failure in healthy subjects, as well as in those with a history of MI or CHD. Heart failure is a syndrome that often results from an MI or CHD. Studies also have examined the "safety" of alcoholic beverage consumption in subjects with heart failure. Current study showed that Left Ventricular Function scores for the None Drinking group remained essentially the abnormal less than normal while for the Drinking group, the Left Ventricular Function scores for the Drinking group remained essentially the normal less than abnormal In a meta-analysis of prospective studies (n = 8) of healthy people ages 21–81, (17) reported that, compared with non-drinkers, the risk of heart failure across different levels of alcohol consumption was greatest for those who consumed 12 drinks per week, and intermediate for those who consumed 3 drinks per week. as well as for those consuming 14 drinks/week, and least for those consuming 7 drinks/week. Based on the results of this study dose-response analysis, consuming 6-10 drinks per week was associated with a 76% high risk of cardiac dysfunction in Iraq.(figure 5-). In contrast, (18) recently examined different levels of alcohol consumption and risk for heart failure in an older population (mean age ~68) and found no evidence that light-to-moderate drinking had a protective effect on incident heart failure in this age group. On the other hand, drinking ≥5 drinks per day (or ≥35 drinks per week) was associated with a higher risk of heart failure.In subjects with reduced ejection fraction–related heart failure (with the fraction of outbound blood pumped from the heart with each heartbeat, or ejection fraction, at <35 percent) and a history of ischemic heart disease or CAD (mean age 59), (18) found that light-to-moderate drinking (1 to 14 drinks/week) was associated with a significant reduction in progressive heart failure and hospitalization. Current study showed that ejection fraction scores for the None Drinking group remained essentially the abnormal less than normal while for the Drinking group, the Ejection Fraction scores for the Drinking group remained essentially the normal less than abnormal More recently, (19) examined the effects of daily wine consumption in subjects enrolled in an Italian trial of heart failure patients (mean age ~ 67), most of whom had reduced ejection fraction Different levels of daily wine consumption (i.e., sometimes, 1 to 2glasses/day, and ≥3 glasses/day) had no effect on fatal or nonfatal outcomes (e.g., hospitalization for a CV event). Subjects who drank wine more often, however, were less likely to have symptoms of depression and more likely to have a better perception of health status. They also had lower levels of circulating inflammatory markers, such as C-terminal proendothelin-1 and pentraxin-3 (20). Thus, low levels of alcohol consumption (1-2 drinks, but not every day) in patients with heart failure may not worsen the condition, especially in those with heart dysfunction. attributable to ischemic CHD. Because heart failure patients usually are older (over age 65) and often are prescribed numerous medications, both the effects of age and of medication use should be carefully considered by patients, clinicians, and researchers. Current study showed that the high number of Iraqi patient with alcohol intake 6-10 times drinks alcohol per week. There are several potential explanations for why we found that the elevated acute MI risk in the hour after alcohol consumption was higher for beer than wine and that the lower risk in the 24 hours after consumption was evident for beer and wine. but it is also possible that the differences are due to the amount of alcohol consumed or to simultaneous food intake rather than the type of alcoholic drink. Because of the high ethanol concentration of beer or wan participants who recently drank beer or wan may have consumed larger

amounts of alcohol at each episode than participants. Who recently drank beer or wine. In the United States, a standard serving of alcohol is defined as 0.6 fluid ounces (~14 grams) of pure alcohol, which is found in 12 ounces of regular beer (~ 5% alcohol), 5 ounces of wine (~12% alcohol) and 1.5 ounces of distilled spirits (~40% alcohol). These serving sizes may not reflect customary serving sizes; one glass of wine or one can of beer has the same alcohol content as only one shot of whiskey (21-22).

CONCLUSIONS

Heavy daily alcohol consumption and binge drinking increase the risk of developing cardiovascular disease can be associated with marked changes in cardiac function.

RECOMMENDATIO

This study recommended to Considering the growing number of older adults, more research is needed to better understand the effects of alcohol consumption on the cardiovascular systems of older populations.

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CONFLICTS OF INTEREST

The study not has conflict of interest, and the work hasn't been submitted to a Journal or other publications.

REFERENCES

I. Lopez, A. D., Mathers, C. D., Ezzati, M., Jamison, D. T., & Murray, C. J. (2006). Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data. The lancet, 367(9524), 1747-1757.

II. Mathers, C. D., & Loncar, D. (2006). Projections of global mortality and burden of disease from 2002 to 2030. PLoS medicine, 3(11), e442.

III. Gardner, C. D., Tribble, D. L., Young, D. R., Ahn, D., & Fortmann, S. P. (2000). Associations of HDL, HDL2, and HDL3 cholesterol and apolipoproteins AI and B with lifestyle factors in healthy women and men: the Stanford Five City Project. Preventive Medicine, 31(4), 346-356.

IV. Muth, N. D., Laughlin, G. A., von Mühlen, D., Smith, S. C., & Barrett-Connor, E. (2010). High-density lipoprotein subclasses are a potential intermediary between alcohol intake and reduced risk of cardiovascular disease: the Rancho Bernardo Study. British journal of nutrition, 104(7), 1034-1042. doi: 10.1017/S0007114510001595.

V. Vu, K. N., Ballantyne, C. M., Hoogeveen, R. C., Nambi, V., Volcik, K. A., Boerwinkle, E., & Morrison, A. C. (2016). Causal role of alcohol consumption in an improved lipid profile: the atherosclerosis risk in communities (ARIC) study. PloS one, 11(2), e0148765.

VI. Larsson, S. C., Orsini, N., & Wolk, A. (2015). Alcohol consumption and risk of heart failure: a dose–response meta-analysis of prospective studies. European journal of heart failure, 17(4), 367-373.

VII. Khadyer, A. Y., & Hassan, H. S. (2019). Effectiveness of an Instructional Program on Knowledge for Patients with Chronic Obstructive Pulmonary Disease Toward Self-Care Management at Al-Hussein Teaching Hospital in Al-Nasiriyah City. Indian Journal of Forensic Medicine & Toxicology, 13(4).

VIII. Khadyer, A. Y., & Hassan, H. S. (2019). Effectiveness of an Instructional Program on Knowledge for Patients with Chronic Obstructive Pulmonary Disease Toward Self-Care Management at Al-Hussein Teaching Hospital in Al-Nasiriyah City. Indian Journal of Forensic Medicine & Toxicology, 13(4).

IX. Majeed, H. M., & Atiyah, H. H. (2021). Assessment of employees' knowledge concerning contributing factors and early detection for Prostate Cancer in Baghdad University Colleges in Bab-Almudam. Indian Journal of Forensic Medicine & Toxicology, 15(1), 1712-1717.

X. .Majeed, H. M., Hassan, A. F., & Abid, R. I. (2020). Evaluation of nurses' knowledge and attitudes toward pain management at Baghdad Teaching Hospitals. Indian Journal of Forensic Medicine & Toxicology, 14(2), 1575-1579.

XI. .Majeed, H. M., Hassan, A. F., Jasim, A. H., & Al-Ganmi, A. H. A. (2023). Evaluation of nurses' practices and perceived barriers related to pain assessment in critically ill patients at Baghdad teaching hospitals. Azerbaijan Pharmaceutical and Pharmacotherapy Journal/Azərbaycan Əczaçiliq Və Farmakoterapiya Jurnalı, 22(1), 64–69. https://doi.org/10.61336/appj/22-1-14

XII. Hassan, H. S. (2011). Assessment of Factors Associated with Prehospital Delay of Patients with Acute Myocardial Infarction. Iraqi National Journal of Nursing Specialties, 24(1).

XIII. Khduier, R. A., & Hassan, H. S. (2023). Effectiveness of Instructional Program in Improve Patients Attitudes towards Atrial Fibrillation in Al-Diwaniyah Teaching Hospital. Pakistan Heart Journal, 56(2), 620-626. https://doi.org/10.4103/jehp.jehp_845_23.

XIV. Abbas, N. H., & Hassen, H. S. (2023). Effect of Nursing Intervention on the Severity of Pain for Patients with Angina in Emergency Unit. A Nursing Intervention Study. Pakistan Heart Journal, 56(2), 632-641.

XV. Sara Tasnim,corresponding author Chantel Tang, Vijaya M Musini, and James M Wright

XVI. (2020): Effect of alcohol on blood pressure. Cochrane Database Syst Rev. 2020 (7): CD012787.Published online 2020 Jul 1. doi: 10.1002/14651858.CD012787.pub2

XVII. Piano, M. R. (2017). Alcohol's effects on the cardiovascular system. Alcohol research: current reviews, 38(2), 219.

XVIII. Wannamethee, S. G., Whincup, P. H., Lennon, L., Papacosta, O., & Shaper, A. G. (2015). Alcohol consumption and risk of incident heart failure in older men: a prospective cohort study. Open Heart, 2(1), e000266.

XIX. Cooper HA, Exner DV, Domanski MJ (2000). Light-to-moderate alcohol consumption and prognosis in patients with left ventricular systolic dysfunction. Journal of the American College of Cardiology. 2000;35(7):1753–1759.

XX. Cosmi F, Di Giulio P, Masson S, (2015). Regular wine consumption in chronic heart failure: Impact on outcomes, quality of life, and circulating biomarkers. Circulation: Heart Failure. 2015;8(3):428–437

XXI. .Koga K, Taguchi A, Koshimizu S, Suwa Y, Yamada Y, Shirasaka N, Yoshizumi H(2007). Reactive oxygen scavenging activity of matured whiskey and its active polyphenols. J Food Sci.;72:S212–217.

XXII. Chiva-Blanch G, Arranz S, Lamuela-Raventos RM, Estruch R(2013). Effects of wine,alcohol and polyphenols on cardiovascular disease risk factors: Evidences from human studies. Alcohol Alcohol. 2013;48:270–277