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Original Research Article

A study on associated risks of smoking, alcohol and smokeless tobacco on hypertension among advocates

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ABSTRACT

Background: Advocates, being stressed out and depressed in the law profession due to unstable work pattern, work overload and lack in coping up skills. They thrive a lot to survive in the profession. In such circumstances, lawyers may lean on alcohol or tobacco. In view of above issues, one of the main objectives of the study is to evaluate the association between use of alcohol, tobacco, smoking and hypertension among practising advocates.
Methods: A cross-sectional study was conducted in a sample of 300 practising advocates at Madurai district court for a period of 1 year by simple random sampling method. Data was collected using structured interview schedule and analysed using SPSS.
Results: Around 263 (87.66%) study participants were non-smokers and 37 (12.33%) were tobacco smokers. Among the tobacco smokers, a majority of 24 (64.86%) were found to be hypertensives (p=0.002). In the current study among the alcohol consumers, a majority of 26 (55.32%) were hypertensives and among the non-consumers of alcohol, only 38.34% were hypertensives (p=0.044).
Conclusions: Advocates being professionals are well educated, informative and aware of complications. Adoption of healthy life style practices, the prevalence of hypertension may be reduced among the advocate community. Life style modifications such as cessation of smoking, alcohol and tobacco should be adopted. Promotive activities like arrangement of health camps in the court, health education, counselling on self-care, stress bursting leisure time activities would reduce the dependency on tobacco and alcohol.

Keywords: Alcohol, Tobacco, Hypertension, Stress, Lifestyle

INTRODUCTION

Habits such as use of alcohol, tobacco has a greater influence on developing hypertension. Alcohol consumption leads to imbalance of the central nervous system, impairment of the baroreceptors, enhanced sympathetic activity, stimulation of the renin-angiotensin-aldosterone system, increased cortisol levels, stimulation of the endothelium to release vasoconstrictors and elevated blood pressure. The nicotine in tobacco products induces the nervous system to release chemicals that can constrict blood vessels and contribute to high blood pressure. Cigarette smoking acutely exerts hypertensive effect, mainly through the stimulation of the sympathetic nervous system. As per WHO report, alcohol consumption was the third largest risk factor in the developed countries and tobacco use was being the second major cause of death worldwide.[1] Advocates are being stressed out and depressed in the law profession due to unstable work pattern, work overload and lack in coping up skills.[2] They thrive a lot to survive in the

profession. The above factors easily expose the advocates to habits such as use of alcohol and tobacco. This may lead to hypertension, were health of the advocates are questionable. Lawyers are unique in that they are not only required to work long hours to satisfy existing clients and they find themselves working constantly in order to climb the corporate ladder. This work schedule oftentimes ruptures relations at home, leaving them with no one to turn to. In such circumstances, lawyers may lean on alcohol or tobacco for support. In view of above issues, one of the main objectives of the study is to evaluate the association between use of alcohol, tobacco, smoking and hypertension among practising advocates.

METHODS

This study is a cross sectional study conducted at Bar association and law chamber, District court, Madurai from September 2015 to August 2016. Advocates in the age group of 30 years and above practicing in Madurai city were included.

Inclusion criteria

Inclusion criteria were advocates in age group of 30 and above; regularly practicing advocates (attending court at least thrice a week); advocates practicing for a period of more than 5 years.

Sample size

According to available studies, relating to prevalence of hypertension among advocates, the prevalence was 36%, considering it as 'p' with limit of accuracy as 16% of prevalence and with 10% attrition the sample size is calculated.[3]

$$N = Za^2 \times P \times Q/L^2$$

=1.96 × 1.96 ×36 ×64/ 5.76×5.76 = 266.72.

With 10% attrition i.e., 26.6, minimum sample size calculated, (266+26.6)=293.32 rounded off to 300. Hence sample size for this study will be 300.

Sampling **method**

From Madurai Bar Association (M.B.A) Advocates voters' affidavit list, 600 advocates were selected by 'simple random sampling' technique using computerized random numbers. Out of that a sample of 300 advocates who satisfy the inclusion criteria are selected by enquiry through phone dialing. Permission from Madurai Bar Association Secretary was obtained prior to the data collection.

Data collection tool

Three blood pressure readings as per JNC VII were measured in all study subjects at an interval of 3 hours in sitting position and the average was calculated using 'sphygmomanometer' (mechanical type with a dial). The participants were advised to refrain use of tobacco in any form or ingestion of caffeine during the 30 minutes preceeding measurement. Newly detected hypertensives were examined again after 2 days in the same manner to confirm that hypertension was constant. Apart from the known hypertensives, based on the blood pressure measurements, the remaining study subjects were classified according to JNC VII criteria. Data was collected using the final proforma, 'structured interview schedule' (modified after pilot). Data on background characteristics and risk factors were obtained from all participants.

Statistical analysis

The data was entered and analysed using SPSS version 16.0. Descriptive statistical analysis done by calculating percentages and chi-square test and odds ratio for association of risk factor and 95% CI were computed. Among the factors evaluated, association between tobacco smoking, smokeless tobacco alcohol and hypertension is discussed in this research article.

RESULTS

Hypertension and associated risk factors

Hypertension and tobacco smoking

It is observed from the Table 1, that around 263 (87.66%) study participants were non-smokers and 37 (12.33%) were tobacco smokers. Among the tobacco smokers, a majority of 24 (64.86%) were found to be hypertensives whereas only 37.64% non-smoker participants were found to be hypertensives. The difference of observation was found to be statistically significant (p=0.002). The odds ratio is 3.058, which indicates that the tobacco smokers had 3.05 greater odds of having hypertension as compared to non-smokers. It denotes that smoking has an association with hypertension.

Hypertension and usage of smokeless tobacco

Majority of 298 (99.3%) participants were non users of smokeless tobacco and only 2 (1.7%) participants were smokeless tobacco users. Among the smokeless tobacco users all the 2 (100%) were hypertensives and 121 (40.6%) participants who were non users of smokeless tobacco were hypertensives. The above difference of observation was not statistically significant (p=0.326).

Hypertension and alcohol consumption

Table 2 shows, that out of 300 study participants, 47 (15.67%) were alcohol consumers and 253 (84.33%) were non-consumers of alcohol. Among the alcohol consumers, a majority of 26 (55.32%) were hypertensives and among the non-consumers of alcohol, 38.34% were

hypertensives. The difference of observation was found to be statistically significant (p=0.044). The odds ratio is 1.9, which indicates that alcohol consumers had 1.9 greater odds of having hypertension as compared to non-alcohol consumer, indicating that alcohol consumers are more prone for hypertension.

Table 1: Distribution of hypertensive subjects and their smoking status.

Smoking status	Hypertensives	Normotensives	Odds ratio	95% CI	P value
Tobacco smokers (current and past users)	24	13			
Tobacco non-smokers	99	164	3.05	1.4-6.8	0.002
Total	123	177			

Table 2: Distribution of hypertensive subjects and alcohol consumption.

Alcohol consumption	Hypertensives	Normotensives	Odds ratio	95% CI	P value
Alcohol consumers (current and past users)	26	21			
Non consumer of alcohol	97	156	1.9	1.0-3.9	0.044
Total	123	177			

DISCUSSION

This discussion is based on above findings obtained as a result of evaluation of association between alcohol, smokeless tobacco, tobacco smoking and hypertension.

Hypertension and tobacco smoking

In the present study, around 24 (64.86%) tobacco smokers (both current and past-smokers) were found to be hypertensives whereas only 37.64% non-smoking participants were found to be hypertensives. The above observation was found to be statistically significant indicating that tobacco smoking has an association with hypertension (p=0.002). The odds ratio is 3.058, which indicates that the tobacco smokers had 3.058 greater odds of having hypertension as compared to non-smoking individuals.The finding of present study related to hypertension was not exactly but almost similar to finding of Madhumitha et al study among urban population in Karnataka, which revealed significant association between smoking and hypertension.[4] It implies that smoking is a risk factor for development of hypertension. This may be due to fact that cigarette smoking increases blood pressure by direct stimulation of sympathetic nervous system and subsequent release of increased nor epinephrine and epinephrine.

Hypertension and smokeless tobacco

In the present study, there were only two users of smokeless tobacco and both the 2 (100%) were hypertensives and 121 (40.6%) participants who were not using smokeless tobacco were hypertensives. The above observation was not statistically significant (p=0.326). On the contrary Westman review article on smokeless tobacco and hypertension revealed that smokeless tobacco caused a clinically significant acute elevation of systolic blood pressure, diastolic blood pressure or pulse in 5 of 6 experimental trials.[5]

Hypertension and alcohol consumption

In the current study among the alcohol consumers, a majority of 26 (55.32%) were hypertensives and among the non-consumers of alcohol, only 97 (38.34%) were hypertensives. The above observation was found to be statistically significant (p=0.044), indicating that alcohol consumers are more prone for developing hypertension.

The odds ratio is 1.991, which denotes alcohol consumers had 1.991 greater risk of having hypertension as compared to non-alcohol consumers. Similar findings were demonstrated in several epidemiological and clinical studies that chronic ethanol consumption (more than three drinks per day, 30 g ethanol) is associated with an increased incidence of hypertension and an increased risk of cardiovascular diseases.[6-14]

CONCLUSION

From the results of this study, there is significant association between alcohol, smoking and hypertension among advocates. Hypertension is preventable and treatable by making healthy choices. Advocates being professionals are well educated, informative and aware of complications. Therefore by regular adoption of healthy life style practices, the prevalence of hypertension may be reduced among the advocate community. Life style modifications such as cessation of smoking, alcohol and tobacco should be adopted. Promotive activities like arrangement of health camps in court premises with guidance of bar council association and health counsellor can be recruited in Bar Council Association for health educating and counselling the advocates. Regular monitoring of health status by self-care management is needed. Work schedules can be pre-planned, prioritized and executed. Implementation of community based screening programs for early detection of hypertension is also needed.

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REFERENCES

1. World Health Organization. Fact sheet. Available at: https://www.who.int/news-room/fact-sheets/detail /alcohol. Accessed on 21 September 2019.
2. The biggest challenges about becoming a lawyer. Available at: https://www.thebalancecareers.com/ lawyer-career-drawbacks-2164594. Accessed on 31 May 2019.
3. Sarda K. The New Indian Express Donning lawyers robes, with no law to protect from stress. Accessed on 20 October: 2014.
4. Madhumitha M, Naraintran S, Manohar C, Revathi S, Biradar MK, Patil RS. Hypertension prevalence and risk factors among urban population in north Karnataka. Int J Cur Res Rev. 2014;6(7):39-45.
5. Westman EC. Does smokeless tobacco cause hypertension?. South Med J. 1995;88(7):716–20.
6. Skliros EA, Papadodima SA, Sotiropoulos A, Xipnitos C, Kollias A, Spiliopoulou CA. Relationship between alcohol consumption and control of hypertension among elderly Greeks. The Nemea primary care study. Hellenic J Cardiol. 2012;53:26–32.
7. Sesso HD, Cook NR, Buring JE, Manson JE, Gaziano JM. Alcohol consumption and the risk of hypertension in women and men. Hypertension. 2008;51:1080–7.
8. Beilin LJ, Puddey IB. Alcohol and hypertension: an update. Hypertension. 2006;47:1035–8.
9. Estruch R, Coca A, Rodicio JL. High blood pressure, alcohol and cardiovascular risk. J Hypertens.2005;23:226–9.
10. Klatsky AL. Alcohol-associated hypertension: when one drinks makes a difference. Hypertension. 2004;44:805–6.
11. Kaplan NM. Alcohol and hypertension. Lancet. 1995;345:1588–9.
12. Husain K, Ansari RA, Ferder L. Alcohol induced hypertension: Mechanism and prevention. World J Cardiol. 2014;6(5):245-52.
13. Son MK. Association between Alcohol Consumption and Hypertension. J Korean Soc Hypertens. 2011;17(2):65-73.
14. Sheps SG. Mayo clinic. Does drinking alcohol affect your blood pressure? Available at: http://www. mayoclinic.org/diseases-conditions/high-blood-pressure/expert-answers/ blood-pressure. Accessed on 31 May 2019.

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