



DOES FAMILY HISTORY OF HYPERTENSION IN FIRST YEAR MBBS STUDENTS INFLUENCE KNOWLEDGE REGARDING DIAGNOSIS AND MANAGEMENT OF HYPERTENSION?

Ramaprabha P^{1*}, Dhandapany Senthil Pragash² and Aravindkumar R³

¹Department of Physiology, DM WIMS Medical College, Wayanad, Kerala. 673577

²Department of Microbiology, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, Melmaruvathur, Tamilnadu - 603319.

³Department of Physiology, Rajah Muthiah Medical College, Annamalai University, Annamalai Nagar, Tamil Nadu 608002

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ABSTRACT

Background: Hypertension is one of the major metabolic risk factors for cardiovascular disease, and accounts for substantial mortality. There are very few studies investigating the knowledge of MBBS students regarding hypertension. In this study, we explored the relationship between presence of family history of hypertension and knowledge regarding diagnosis, management and complications of hypertension in first year MBBS students.

Methods: This study was conducted in a private medical college in Tamil Nadu, India. 149 first year MBBS students were recruited in this cross-sectional study. Approval was obtained from the Institutional Ethics Committee, and a pre-tested, structured questionnaire was administered to all respondents.

Results: Most students knew the basics of hypertension- what it was, and how it was diagnosed. Only 42% of those without family history of hypertension knew that treatment is lifelong, as compared to 65% of those with family history ($p = 0.005$). 92.5% of those with positive family history knew that salt-restricted diet is part of management, in contrast to 76.8% of those without positive family history.

Conclusions: Those with family history of hypertension had significantly better knowledge about the duration of treatment. Similarly, those with a positive family history were significantly more likely to know that salt-restricted diet is advised as part of management of hypertension.

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INTRODUCTION

Globally, hypertension is responsible for nearly 1/3rd of the 17 million annual deaths due to cardiovascular disease (World Health Organization, 2013). It is responsible for 51% of stroke deaths and at least 45% of deaths due to heart disease, and disproportionately affects people in low and middle-income countries (WHO South-East Asia Region Office, 2013b; World Health Organization, 2013, 2016a). This is on account of weak health systems, greater populations, and large number of undiagnosed, untreated and uncontrolled patients in these countries (World Health Organization, 2013). The prevalence of hypertension is on the rise, with 40% of the world's adults over 25 years age having hypertension (World Health Organization, 2013, 2016b). It is a major public health problem (WHO South-East Asia Region Office, 2013a), and was the World Health Day theme in 2013 (WHO South-East Asia Region Office, 2013b).

*Corresponding author: Ramaprabha P

Department of Physiology, DM WIMS Medical College, Wayanad, Kerala. 673577

There is a paucity of literature regarding medical students' knowledge about hypertension (Rehman *et al.*, 1994; Shaikh *et al.*, 2011). This study was conducted in a private medical college in south India to determine if family history of hypertension influences awareness of hypertension in first year MBBS students.

MATERIALS AND METHODS

This study was conducted among first year MBBS students of Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, a private medical college in Tamil Nadu, India. The institution has been awarded 150 seats for the MBBS course. We decided to include all 150 students in this cross-sectional study.

The study was conducted after the end of Semester 1, in February 2014, and was limited to first year MBBS students. Students had not been formally taught about hypertension at the time of study.

Before conducting the study, we obtained approval from the Institutional Ethics Committee as well as written informed

Does family history of hypertension in first year MBBS students influence knowledge regarding diagnosis and management of hypertension?

consent from all students. All but one student participated in the study. A pre-tested, structured questionnaire containing questions regarding diagnosis, management, complications and prevention of hypertension was administered to study subjects.

Data entry and transformation were performed using Microsoft Office Excel 2010. Data analyses were performed using EZR (version 1.34 (R Commander version 2.3-0))(Kanda, 2013). Descriptive statistics, and chi-square test were performed. A p value of ≤ 0.05 was considered statistically significant.

RESULTS

There were a total of 149 respondents, of whom 75(50.3%) were male, and 74(49.6%) were female.

Students were asked to indicate their place of residence, and if there was a family history of hypertension. 80 students indicated that they had a family history of hypertension, while 69 reported no such family history. Of those with family history of hypertension, 56 (70%) and 24 (30%) resided in urban and rural areas respectively. In contrast, of those without family history of hypertension, 38 (55.1%) and 31 (44.9 %) were from urban and rural areas respectively.

The results of chi-square test are presented in table.

Table Student responses to questions, disaggregated by presence or absence of family history

Item	Response	Family history present n(%)	Family history absent n(%)	p value
What is hypertension?	Increase in BP	79 (98.8)	68 (98.6)	1
	Others	1 (1.2)	1 (1.4)	
Anti-hypertension treatment is to control	Blood Pressure	72 (90)	67 (97.1)	0.10
	Others	8 (10)	2 (2.9)	
	Diagnosis of hypertension and its complications			
Hypertension is detected	By regular BP monitoring	76 (95)	68 (98.6)	0.37
	Others	4 (5)	1 (1.4)	
Features of Hypertensive heart disease are	Tachycardia, chest pain, pedal oedema	75 (93.8)	62 (89.9)	0.54
	Others	5 (6.2)	7 (10.1)	
Features of hypertensive renal disease are	Oliguria, facial oedema	41 (51.2)	34 (49.3)	0.87
	Others	39 (48.8)	35 (50.7)	
	Management of hypertension			
Medicines	Yes	77 (96.2)	60 (87)	0.06
	No/ Don't know	3 (3.8)	9 (13)	
Meditation	Yes	78 (97.5)	68 (98.6)	1
	No/ Don't know	2 (2.5)	1 (1.4)	
Exercise	Yes	69 (86.2)	63 (91.3)	0.4
	No/ Don't know	11 (13.8)	6 (8.7)	
Duration of treatment is	Lifelong	52 (65)	29 (42)	0.005
	Others	28 (35)	40 (58)	
After normalization of BP	Decrease/ continue same dose	72 (90)	61 (88.4)	0.79
	Others	8 (10)	8 (11.6)	
No/ stop smoking	Yes	59 (73.8)	57 (82.6)	0.23
	No/ Don't know	21 (26.2)	12 (17.4)	
Not/stop consume alcohol	Yes	61 (76.2)	53 (76.8)	1
	No/ Don't know	19 (23.8)	16 (23.2)	
Salt Restricted Diet	Yes	74 (92.5)	53 (76.8)	0.01
	No/ Don't know	6 (7.5)	16 (23.2)	
Hypertensive patients should avoid	Salt, pickle	76 (95)	66 (95.7)	1
	Others	4 (5)	3 (4.3)	
Reducing body weight	Decreases BP	24 (30)	21 (30.4)	1
	Others	56 (70)	48 (69.6)	
	Complications			
Complications of hypertension are	Heart failure, stroke, renal disease	76 (95)	66 (95.7)	1
	Others	4 (5)	3 (4.3)	
How can patients prevent complications?	Reduce body weight; avoid smoking, alcohol; dietary management	70 (87.5)	57 (82.6)	0.48
	Others	10 (12.5)	12 (17.4)	

From table, it is seen that most students correctly answered the question 'what is hypertension?'. However, a greater proportion of those without family history of hypertension correctly answered the question asking what the purpose of anti-hypertension treatment is. A similar pattern was noticed with respect to the question asking 'How is hypertension diagnosed?'. Greater proportions of students with family history of hypertension gave correct answers to questions regarding hypertensive heart disease and hypertensive renal disease, and medicines to manage the condition. However, these differences did not attain statistical significance. 52 (65%) of those with a family history of hypertension mentioned that the duration of treatment was lifelong. In comparison, only 29 (42%) of those without family history of hypertension gave the correct answer. This difference was statistically significant, with p value 0.005.

Awareness regarding avoidance of salt, pickle; reducing body weight; and alcohol cessation was similar between those with family history of hypertension, and those without such history. 74 (92.5%) of those with positive family history correctly mentioned salt restricted diet as a means of managing hypertension. In contrast, only 53 (76.8%) of those with negative family history gave the correct answer.

This difference was statistically significant, with a p value of 0.01.

DISCUSSION

Hypertension is one of the major metabolic risk factors for the development of cardiovascular diseases (World Health Organization, 2013, 2016).

However, a large proportion of those with the condition are unaware of their status, and risk the development of cardiovascular diseases, as well as premature mortality (World Health Organization, 2013).

This study's results revealed that first year students have some knowledge about hypertension even before they are formally taught about it. This is similar to the findings reported by some other investigators (Rehman *et al.*, 1994; Shaikh *et al.*, 2011).

Despite this, there are some major gaps in knowledge regarding management of hypertension. The most prominent is information that treatment is lifelong. This is on account of the fact that failure to continue treatment is likely to result in catastrophic health care expenses due to cardiovascular diseases like stroke (World Health Organization, 2013). While those with family history of hypertension knew that treatment was lifelong, those without such history did not. Considering that a large proportion of those with hypertension are unaware of their condition, the proportion of people with hypertension who are aware of their condition is relatively small.

The other major gap in respondents' knowledge is regarding the advice to follow a salt restricted diet. Although a large proportion of those with positive family history knew about this, the same was not true for those without a family history of hypertension.

Salt control is a major aspect of disease control in hypertension, and is advocated at both the individual and population level (World Health Organization, 2014). Since knowledge influences practice, it is imperative that awareness regarding the benefits of a low salt diet is increased.

This study is one of few that have assessed the knowledge level of first year MBBS students regarding hypertension, and is unique in evaluating the influence of family history on this knowledge.

Since there are no other known studies on this topic, it is not possible to compare our findings with those of other investigators. This lack of external comparison is both a strength and limitation of this study.

CONCLUSIONS

Although the knowledge of first year MBBS students regarding the diagnosis and management of hypertension is acceptable on the whole, there are critical gaps in their knowledge.

Those with a family history of hypertension are significantly more likely to know that treatment for hypertension is lifelong, and that following a salt-restricted diet is a part of management.

We recommend that more such studies are conducted, and the findings of this study corroborated.

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