



## Short Communication

## Awareness, treatment adherence and risk predictors of uncontrolled hypertension at a tertiary care teaching hospital in Western India

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## ABSTRACT

**Introduction:** Hypertension still remains poorly controlled.**Result:** Adequate BP control was achieved in 37.4% of patients and significant attributes for poor control were BMI, marital status, literacy, socioeconomic status, smoking, medication adherence, absence of side effects, number of drugs, number of years on drug therapy and co-morbid conditions.© 2016 Cardiological Society of India. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Adult hypertension prevalence has risen dramatically in India over the past three decades and is the leading non-communicable disease.<sup>1,2</sup> For countering the increasing prevalence of hypertension in developing nations undergoing epidemiological transition like India; better awareness, management, and control of high BP levels are crucial for the reduction of CVD.

It is important to gather information regarding awareness, adherence and control of hypertension so as to investigate variables associated with inadequate BP control.

The study was conducted at outpatient clinic in Department of Cardiology at SMS Medical College Jaipur from December 2013 to November 2015. All hypertensive patients attending the cardiology clinic during the study period were asked to complete a standardized questionnaire on demography, medication adherence, knowledge about target BP values, hypertension risks, and the presence of drug side effects (Table 1).

Most of the patients were long-term hypertensives, with 69.5% (666/958) of patients taking antihypertensive medications for at least 3 years. Overall, only 54.6% of patients were highly adherent to antihypertensive medication. Current strategies to control BP among Indian hypertensive patients are not satisfactory because only 37.4% of hypertensive patients have their BP adequately controlled even if they were taken care by a tertiary care hospital. These findings from this study have enormous public health significance for policy makers and physicians alike. There was a

significantly greater BP control ( $P=0.001$ ) in patients without diabetes and/or CKD (40.8%) when compared to patients with diabetes and/or CKD (20.96%).

Although a significant percentage (64.4%) of patients reported to measure BP regularly, only 50.5% were aware of their target BP

**Table 1**

Demographic and baseline clinical characteristics of the patients.

S. no.	Variable	Total subjects (n = 958) N (%)
1	Age, mean (SD)	57.06 (13.15)
2	Male	620 (64.7)
3	Body mass index (BMI), mean (SD)	24.09 (4.60)
4	Married	903 (94.3)
5	Literate	557 (58.1)
6	Socioeconomic class (I, II, III)	397 (41.4)
7	Socioeconomic class (IV, V)	561 (58.6)
8	Smoker	208 (21.7)
9	No. of drugs, mean (SD)	2.23 (0.88)
10	No. of years on drugs, mean (SD)	4.35 (2.7)
11	Low adherence	437 (45.6)
12	Knowledge of target BP	484 (50.5)
13	Knowledge of hypertension risks	510 (53.2)
14	Regular BP monitoring	617 (64.4)
15	Reported side effects	198 (20.7)
16	Co-morbid conditions	
	Coronary artery disease	66 (6.9)
	Cerebrovascular disease	33 (3.4)
	Chronic kidney disease (CKD)	55 (5.7)
	Diabetes mellitus	167 (17.4)
	Metabolic syndrome	200 (20.88)

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figures (systolic and diastolic) and just 53.2% of patients were aware of risks due to HTN. Therefore, a major implication of this study is the need for education of patients and their caretakers to target BP figures so that they can correctly identify whether it is elevated or controlled. The logistic regression analyses of the study population revealed that the covariates medication adherence, marital status, BMI, socio-economic status, literacy, smoking, drug side effects, number of drugs and number of years on antihypertensive drugs significantly influence BP control. Variables most likely to be favourably influenced by team-based health care interventions are medication adherence and smoking. In patients with hypertension, medication non-adherence is a significant, often unrecognized, risk factor that contributes to inadequate BP control. Roughly 21% of patients reported side effects of antihypertensive drugs, and drug side effect was significantly associated with poor BP control in our study. Continuing consideration should be given to side effects of antihypertensive drugs, because side effects are one of the most important causes of nonadherence.<sup>3</sup>

It is important to assess the current status of patient's knowledge and awareness with respect to hypertension, lifestyle, medication, and risk factors so as to enrol the patient as a participant in the management of his hypertension. Without being distracted by the guidelines controversy, we should concentrate on achieving adequate BP control rates around the world.

#### Conflicts of interest

The authors have none to declare.

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