

PREVALENCE OF HYPERTENSION AMONG ELDERLY RESIDING IN SLUMS OF WEST DELHI

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ABSTRACT

Objective: The present study was carried out to assess the prevalence of hypertension among elderly in slums of West Delhi.

Methods: A cross-sectional study was carried out among 202 elderly residing in urban slums of West Delhi. Hypertension was classified as per JNC VII criteria. Blood pressure was measured twice using digital machine (OMRON) after an interval of 5 min. The data obtained were analyzed for percent prevalence, mean, standard deviation, and median.

Results: The overall prevalence of hypertension was 49.1%; higher among male (56.0%) than female (41.9%). The prevalence of Stage I, Stage II, and isolated systolic hypertension was 30.7%, 18.8%, and 47%, respectively.

Conclusion: Almost half of the elderly population in slums was hypertensive. Periodical health checkup and management through treatment and dietary and lifestyle modification is needed.

Keywords: Elderly, Hypertension, Slum.

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INTRODUCTION

Hypertension is common in elderly and is considered as a risk factor for cardiovascular morbidity and mortality [1]. Globally, it is estimated that there are 874 million adults with systolic blood pressure ≥ 140 mmHg [2]. The global burden of disease study 2015 revealed high systolic blood pressure as one of the 10 largest contributors to disease burden [3]. Urban residence and migration to urban areas are reported to be a leading cause of increased prevalence of raised blood pressure [4].

Prevalence of hypertension is significantly higher among elderly compared to younger adults [5]. Hypertension also leads to economic burden among low socio economic population [6]. Elderly of low-middle socioeconomic status have a high burden of non-communicable disease due to lack of awareness about their disease conditions [7]. The present study was undertaken to assess the prevalence of hypertension among the elderly migratory population in slums of West Delhi.

METHODS

The study was carried out among elderly (≥ 60 years) residing in slums of West Delhi. The study population belonged to economically deprived migratory population mainly from Uttar Pradesh and Bihar. Hypertension was defined as per Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure VII (JNC VII) criteria [8]. In cases where systolic and diastolic blood pressure falls into different categories, blood pressure of higher category was used to classify hypertension [9]. A total of 202 elderly were recruited. Blood pressure was measured twice using digital machine (OMRON) after an interval of 5 min. An average of two readings was taken and analyzed for percent prevalence, mean, standard deviation (SD), and median. Institutional ethical clearance

was obtained before data collection. Informed consent was obtained from all the study participants.

RESULTS

A total of 202 elderly were recruited for the study, out of which 109 and 93 were male (54%) and female (46%), respectively.

The overall prevalence of hypertension was 49.5% (Table 1); higher among male (56.0%) than female (41.9%). The prevalence of both Stages I and II hypertension was higher in male (33% and 22.9%, respectively) than female (28% and 14%, respectively). The prevalence of prehypertension and isolated systolic hypertension (ISH) was 36.1% and 47%, respectively.

The mean \pm SD and median systolic blood pressure of hypertensive elderly was 161.6 \pm 35.7 mmHg and 154.5 mmHg, respectively (Table 2). Whereas the mean \pm SD and median systolic blood pressure of non-hypertensive elderly was 122.2 \pm 11.4 mmHg and 122.5 mmHg, respectively.

Similarly, the mean \pm SD and median diastolic blood pressure of hypertensive elderly was 88.1 \pm 10.3 mmHg and 88.3 mmHg, respectively. Whereas the mean \pm SD and median systolic blood pressure of non-hypertensive elderly was 74.7 \pm 8.9 mmHg and 75.5 mmHg, respectively.

DISCUSSION

The World Health Organization Study on Global Ageing and Adult Health in India covering 12,198 respondents aged 18 and above revealed that hypertension is common even among low socioeconomic group [10]. The awareness is low regarding hypertension, its risk factors and complications [11,12].

Table 1: Prevalence of hypertension among elderly (n=202)

Category (systolic/diastolic blood pressure mmHg)	All n=202 (%)	Male n=109 (%)	Female n=93 (%)
Pre-hypertensive (120–139 or 80–89)	73 (36.1)	38 (34.9)	35 (37.6)
Hypertensive (≥140 or ≥90)	100 (49.5)	61 (56.0)	39 (41.9)
Stage I hypertension (140–159 or 90–99)	62 (30.7)	36 (33.0)	26 (28.0)
Stage II hypertension (≥160 or ≥100)	38 (18.8)	25 (22.9)	13 (14.0)
ISH (≥140 mmHg)	95 (47.0)	57 (52.3)	38 (40.9)

ISH: Isolated systolic hypertension

Table 2: Distribution of mean±SD and median systolic and diastolic blood pressure (n=202)

Category	All (n=202)		Male (n=109)		Female (n=93)	
	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)
Hypertensive						
Mean±SD	161.6±35.7	88.1±10.3	158.9±19.6	89.6±10.9	159.4±17.6	85.9±8.9
Median	154.5	88.3	153.5	90.5	156.0	87.0
Non-hypertensive						
Mean±SD	122.2±11.4	74.7±8.9	123±11.9	76.8±6.8	121.2±11.0	72.9±10.1
Median	122.5	75.5	125.0	78.5	121.5	73.0
All						
Mean±SD	140±24.1	81±11.7	143.2±24.3	84±11.3	137±23.6	78.5±11.5
Median	138	82	142	83	133	79.5

Our study indicated almost half (49.5%) of the elderly population has hypertension. Similar to our findings a cross-sectional study carried out among elderly in Raipur, Chhattisgarh, including urban and slum area indicated an overall prevalence of hypertension as 50% [13]. Another study carried out among 211 elderly in rural Puducherry also reported the prevalence of hypertension as 40.5% [14]. Studies carried out in slums of Delhi have also reported the prevalence of hypertension among as 40–67% [15,16]. A study carried out in Indonesia also reported prevalence of hypertension as 37.3% among older adults aged 60 to 69 years [17].

Prevalence of prehypertension among elderly is similar to adults. Prevalence of prehypertension is reported as 32–35% among Indian adults [17,18]. Our study indicated prevalence of prehypertension as 36.1%. Similarly, a study carried out among Taiwanese older adults also revealed prevalence of prehypertension as 35.8% [19].

Previous studies have reported a higher prevalence of hypertension among female elderly than male elderly [13,20]. However, the present study showed higher prevalence (56.0%) among males than females (41.9%). A study carried out among elderly women in Mumbai slums also revealed prevalence of hypertension as 38.4% [21]. A study carried out in 14 villages of Malaysia reported higher prevalence (62.7%) of hypertension among male elderly than female elderly (55.1%) [22].

ISH is common among elderly, and its prevalence increases with age due to age-related rigidity of aorta [23]. The Korea National Health and Nutrition Examination Survey 1998–2012 revealed that the proportion of subjects with ISH increases with advancing age in older adults (≥40 years) [24]. Our study indicated 47% prevalence of ISH.

CONCLUSION

Almost half of the elderly population in slums was hypertensive. Periodical health check-up and management through treatment and dietary and lifestyle modification is needed.

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AUTHORS CONTRIBUTION

***Equal contribution**

*Zaozianlungliu Gonmei: Data collection and analysis, interpretation of data, paper writing

*Supriya Dwivedi: Data collection and analysis, interpretation of data, paper writing

Gurudayal Singh Toteja: Conception and design of study, Data collection, interpretation of data and finalization of paper

Karuna Singh: Conception and design of study and interpretation of data

Naval Kishore Vikram: Data collection and Interpretation of data

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

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