

# Hypertension in the Elderly, Awareness, Control and Complications Cross-Sectional Study

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## Abstract

**Background:** Essential hypertension is the term applied to the 95% of cases in which no specific underlying cause can be identified. Increases with advancing age, and affects more than half of all people over the age of 60, including isolated systolic hypertension. Nearly three quarters of people with hypertension live in developing countries where awareness of the disease and access to health care are sometimes inadequate.

**Patients and methods:** A total of 275 elderly patients 60% (n=165) females, 40% (n=110) males, were seen for (pre-operative elective surgery) medical check-up, who were found to be hypertensive, included in a cross-sectional study, assessing the disease awareness, control, compliance and complications by clinical assessment and laboratory tests. Their ages ranged from 60-83 years (mean age = 68.5).

**Results:** From the total only 12% (n=33) of patients were found achieving good control. Morbidity rate was high. Though hypertension is common in the elderly persons, I noticed the rates of awareness, treatment, and control in these patients were low, leading to many morbidities especially cardiovascular events and stroke.

**Key words:** Hypertension, Elderly, Awareness, Control, Prevalence, Developing countries, Complications.

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## Introduction

Hypertension is a major health problem and a leader cause of mortality and morbidity worldwide, almost a quarter of the world's adult population has hypertension [1]. The progressive ageing of world population, and the increasing prevalence of hypertension in elderly people are leading to the consideration that hypertension in the elderly is one of the main topics in hypertension treatment [2]. Furthermore, absolute benefit from anti-hypertensive is greatest in older people (at least up to 80 years). [3,4] Nearly three quarters of people with hypertension live in developing countries where awareness of the disease and access to health care are sometimes inadequate. Most of these countries have no National guidelines for

diagnosis and treatment of hypertension. When they do, the local guidelines are merely a copy of the American or European guidelines, and have not been adjusted to meet the needs of the country. [5] However, there has been a tendency not to treat hypertension in elderly with anti-hypertensive medications. For example, only 25% of patients with systolic pressures as high as 180-185 mmHg currently are being treated. In fact, studies have shown that Stage 1 hypertension is often not treated in this age group. All of this information demonstrates that hypertension in the elderly is a significant problem that deserves more attention. [6] I hope this study will increase awareness of our patients about their disease, and to accept that it is a disease that can

cause serious consequences-it is the silent killer, especially when concomitant diseases are present like diabetes and dyslipidemia. Further we have to match the doctor's concept of hypertension in elderly as a disease with their patient's perspective, and accept patients as active partners in decision making.[7] The aim of this study is to show the burden of the disease in elderly persons as far as awareness, control, complications, and the recommended blood pressure goal are concerned.

### Patients and Methods

From the first of October 2010 to the first of October 2012, (275) elderly patients were collected 60%(n=165) females, 40% (n=110) males , were seen in Iraq, Diyala/ Saadia city/ Alsaadia General Hospital, department of internal medicine referred for ( pre-operative elective surgery) medical check-up, who were found to be hypertensive (blood pressure  $\geq$  140/90 mmHg) , on an outpatient and inpatient basis, included in a cross-sectional study, assessed by measuring blood pressure with a well-calibrated sphygmomanometer with a cuff of proper size (the bladder width within the cuff encircle at least 80% of the arm circumference) . Because blood pressure readings in many individuals are highly variable especially in the office setting, the diagnosis of hypertension was made only after elevation is noted on three occasions, over a period of one week unless the elevations are severe or associated with symptoms. All patients were interviewed about awareness of the disease, adherence to doctor's advice, their believes & perspectives about the nature, control, preventive

measures such as lifestyle, dietary habits, physical activity, smoking and alcohol consumption , presence of concomitant diseases and if other drugs were used which may breakdown blood pressure control like steroids, non steroidal anti-inflammatory drugs.

Patients with features pointing to secondary hypertension (renal parenchymal and renovascular diseases, pheochromocytoma, and hypothyroidism) or those who previously well controlled and become refractory to treatment, and those with acute illness are excluded from the study. Clinical assessment stressed on physical signs as radio- femoral delay, palpable kidneys, abdominal bruits, and the characteristic facies and habitus of possible underlying causes of secondary hypertension. Examination for features of important risk factors such as central obesity & tendon xanthomas, and abnormal signs due to target organ damage (blood vessels, central nervous system, retinas, heart and kidneys). All patients underwent a limited number of investigations (Urinalysis, Blood urea, Creatinine, electrolytes, Blood glucose, Serum total and high-density lipoprotein cholesterol, Chest X-ray, 12-lead ECG and Echocardiogram).

### Results

From total 12%(n=33) of patients, when seen during medical check-up for elective surgery, found achieving good control (blood pressure  $<$  140/90 mmHg), the rest of them sustained uncontrolled blood pressure nearly half with severe hypertension. (Table-1) Shows the distribution of patients according to the severity of hypertension.

**Table (1):** Distribution of Patients According to Severity of Hypertension

Severity	Number	Percent
Stage 1	77	(28.5%)
Stage 2	198	(71.5%)

In 52.7% (n=145) hypertensive patients target organ damage was recorded, like chronic heart failure, coronary heart disease, left ventricular failure, cerebrovascular

accidents such as minor and major stroke, chronic kidney disease and different stages of hypertensive retinopathy (Table-2)

**Table (2):** Incidence of morbidity (Target Organ Damage).

DISEASE	PERCENT
Cerebrovascular accident	23%
Coronary heart disease	31%
Left ventricular hypertrophy	27.5%
Arrhythmia (AF, PVC)	21%
Left ventricular Systolic dysfunction	4%
Left ventricular diastolic dysfunction	10%
Chronic heart failure	5.5%
Retinopathy	17%
Nephropathy	10%
Central retinal vein occlusion	1%

AF=Atrial fibrillation, PVC=Premature ventricular complexes.

From total number, 39% (n=108) patients were not aware of their disease, (not receiving anti-hypertensive medications). Diastolic blood pressure in 74% (n=80) of them was ranging between 90-99 mmHg (Stage 1) as compared to their systolic blood

pressure, in 11% (n= 12) of them was ranging between 140-159 mmHg (Stage 1) otherwise their systolic blood pressure was  $\geq 160$  mmHg (Stage 2) depending on the staging of blood pressure on office base (8), shown in (Table-3).

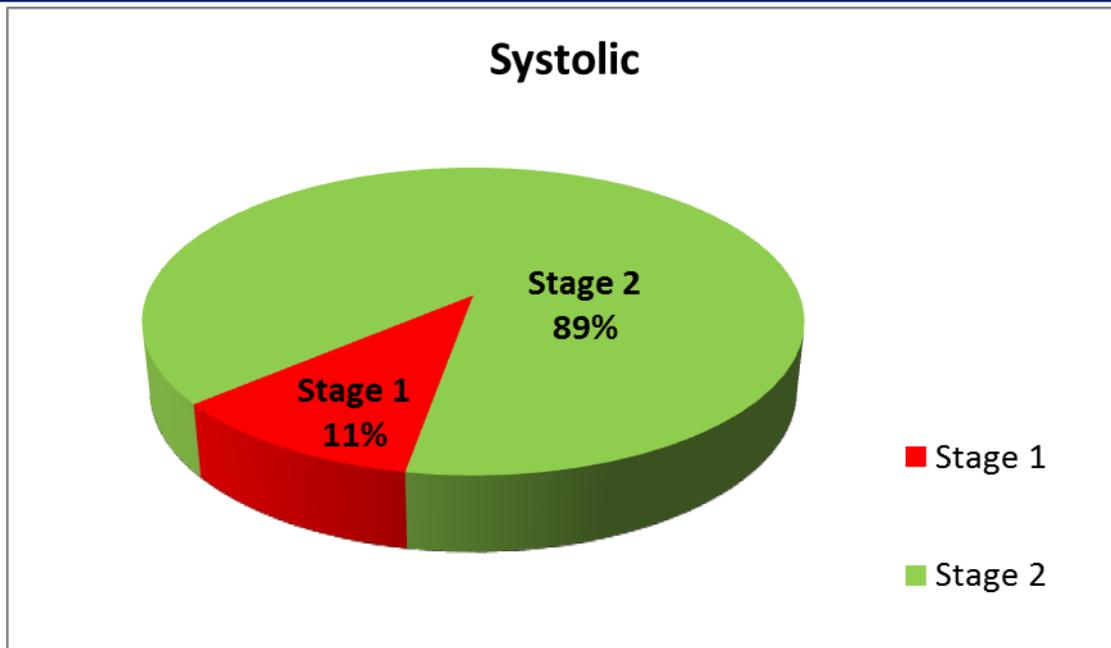
**Table (3):** (Staging of Office Blood Pressure\*).

Blood Pressure Stage	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)
Normal	< 120	< 80
Pre-hypertention	130-139	80-89
Hypertension stage-1	140-159	90-99
Stage-2	$\geq 160$	$\geq 100$

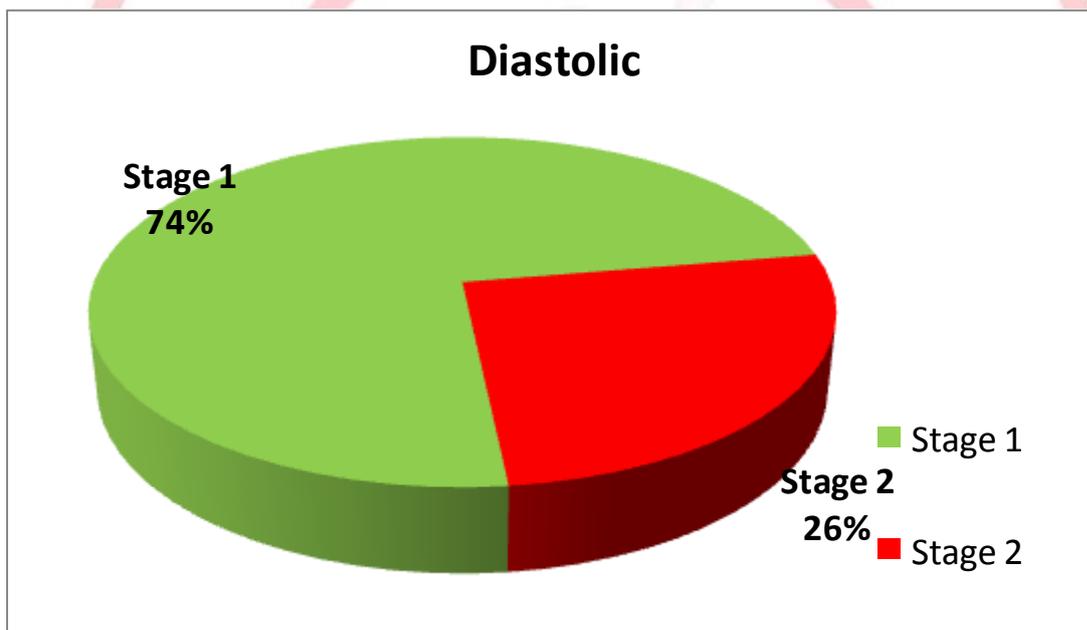
\*Calculation of seated blood pressure is based on the mean of two or more readings on two separate office visits.

From Chobanian A, Bakris G, Black H, et al: The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. The JNC 7 report. JAMA 289:2560-2572, 2003.

This finding comes in accordance with other studies as far as the levels of systolic and diastolic blood pressures in untreated hypertensive elderly persons are concerned (Figure-1), (Figure-2).



**Figure (1):** Distribution of Systolic Blood pressure according to severity.



**Figure (2):** Distribution of Diastolic Blood pressure according to severity.

From total number of patients, 25% (n = 69) were noticed to have postural drop in systolic blood pressure ( $\geq 20$  mmHg). And 13% (n= 35) of total patients found to have isolated systolic hypertension, according to the classification of isolated systolic hypertension as shown in (Table-4) [9].

**Table (4):** Classification of Isolated Systolic Hypertension.

Category	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)
Grade 1	140-159	< 90
Grade 2	$\geq 160$	< 90

## Discussion

High percentage (>85%) of patients with poorly controlled blood pressure, seems to be multi-factorial in these patients. In my study 39% of patients were not aware of their disease, because lesser degrees of hypertension, though harmful, are often not associated with specific signs or symptoms (disease nature) also observed by (1).

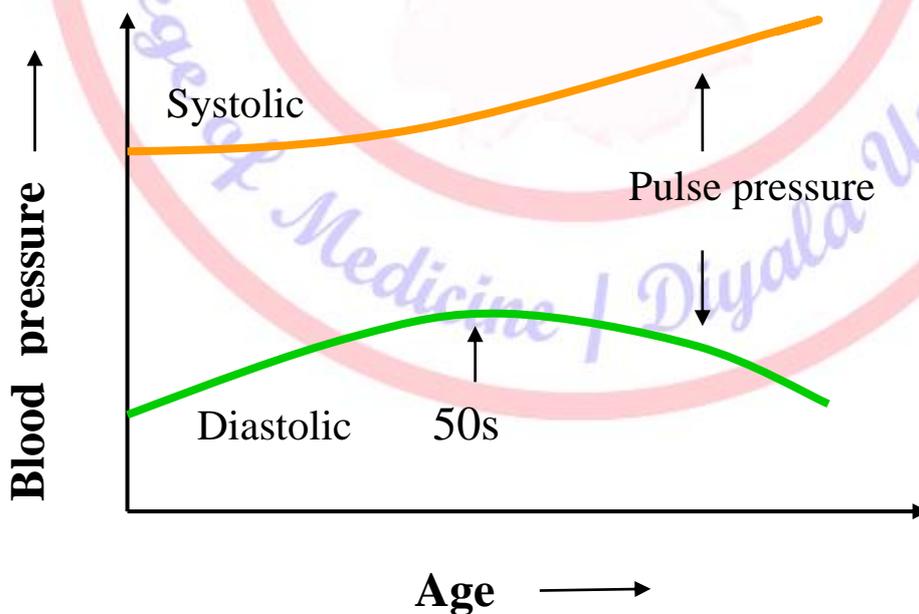
Physicians are not stressing on modifiable factors, including sedentary life style, dietary habits, overweight and obesity, high calorie intake, smoking and alcohol consumption, which are predisposing risk factors for hypertension. Furthermore, some neglect the fact that (The thresholds for treatment, target blood pressure, and the tolerance of anti-hypertensive drugs in the elderly are similar to that in younger patients) and this also agreed by (10), Except start low and go slow.

I observed that economy, ignorance and cognitive decline by elderly persons play an important role in not following the advice that adherence to the treatment is imperative. Education of the patient is a must on the part of the physician. Continuous regular

treatment is economical than that of its complications as also stressed on by (11).

By questioning these patients I found that primary health care personnel and physicians, are not measuring the blood pressure in the elderly while they are standing in addition to while they are sitting or lying, leading to wrong management decisions and eventually less compliance due to troublesome side effects of unnecessary anti- hypertensive drugs. I noticed that 25% of patients had postural hypotension so I stress, blood pressure measurement in older persons, especially those with diabetes mellitus, should include an evaluation for orthostatic hypotension. These results were agreed by other studies and similar to that in [12]

False believes from the physician and patient parts that (isolated systolic hypertension {13% of patients in my study} needs no pharmacological treatment), in contrast to the well known fact that systolic blood pressure is the most important predictor of cardiovascular disease and stroke with progression of age this finding is in agreement with [12,13] ( Figure-3).



**Figure (3):** Blood pressure and age.

Isolated systolic hypertension should be the primary target for diagnosis and

management in older persons. This point was also stressed by (13).

A symptomatic individuals with hypertension are less likely to accept their diagnosis and treatment than are those with other diseases.

The presence of co-morbidity necessitates the use of drugs like (steroids, non-steroidal

anti-inflammatory drugs) leading to breakdown blood pressure control and non compliance due to poly-pharmacy (Table-5).

**Table (5):** Incidence of Co-morbidity.

Disease	Number	Percent
Diabetes mellitus	76	28%
Musculoskeletal disorders	36	13%
Dyslipidemia	35	13%
Gall stones	18	6.5%
Peptic disease	16	6%
Hyperuricemia	16	6%
Chronic obstructive pulmonary disease	12	4%
Asthma	3	1%
Parkinson's disease	2	1%

## Conclusion

High prevalence of hypertension in elderly persons especially those over 75 years of age (affects two out of three)(4), due to multiple mechanisms, including stiffening of large arteries, endothelial dysfunction, autonomic deregulation, and renal aspects. Furthermore, there is the valid consideration that a too rapid or too great of a reduction of blood pressure may be poorly tolerated in older people and lead to poor compliance, we have to start low and go slow. (6) Inadequate treatment, especially for isolated systolic hypertension, poor attention to preventive modifiable measures, complicates the problem more especially in patients with other risk factors such as diabetes mellitus, dyslipidemia, and chronic renal disease. Approximately 69% of those who have a first heart attack, 77% who have a first stroke, and 74% of those with congestive heart failure have blood pressure greater than 140/90 mmHg. (15) Hypertension is a widely prevalent and as important a risk factor for the cardiovascular diseases in those aged 65

and over as it is in those under 65 and this is in accordance with (16). Hypertension is more prevalent, less well-controlled, and more severe in the elderly, this is agreed by (17). For these reasons, the best approach to hypertension is to develop a national program for prevention, early detection, and control. More attention should be paid to educate people to raise awareness about hypertension and predisposing life style risk factors. Life style modifications should be the first treatment for patients with mild hypertension. Finally we need to establish a primary health care system for improving the control of non-communicable diseases such as hypertension and diabetes.

## Acknowledgements

I thank greatly Diyala Health Directorate administrative who funded this study. I received in-kind support from Al-Saadia General Hospital, I acknowledge the participants, the clinical and research staff of the Hospital. I thank Dawa'a SA. For her excellent secretarial work in the preparation of the manuscript.

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