

## Hypertension in the Elderly

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### Abstract

Hypertension is a global public health problem, and it is estimated that by 2025 more than 1.5 billion individuals worldwide will have hypertension, accounting for up to 50% of heart disease risk and 75% of stroke risk. Hypertension is an important risk factor for cardiovascular morbidity and mortality, particularly in the elderly. It is a significant and often asymptomatic chronic disease, which requires optimal control and persistent adherence to prescribed medication to reduce the risks of cardiovascular, cerebrovascular and renal disease. The aim of this review article was to highlight the importance of aged related factors, complications, assessment, nursing management and prevention.

**Keywords:** Hypertension; Elderly; Complications; Nursing Care.

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### Introduction

Hypertension is a global public health problem, and it is estimated that by 2025 more than 1.5 billion individuals worldwide will have hypertension, accounting for up to 50% of heart disease risk and 75% of stroke risk.<sup>1</sup> Three out of 4 adults older than the age of 65 have 3 or more chronic conditions such as diabetes, obesity, cardiovascular disease, congestive heart failure, atrial fibrillation, stroke, cognitive impairment, renal insufficiency, and not the last of which, hypertension.<sup>2</sup>

Hypertension in the geriatric population is typically characterized by a high systolic BP (SBP) in the setting of a normal or even decreased

diastolic BP. Both elevated SBP and elevated pulse pressure (the difference between SBP and diastolic BP) are related to an age related increase in arterial stiffness. The incidence of hypertension overall rises with age, reaching a prevalence of 60-80% beyond 65.<sup>3</sup>

Hypertension is an independent risk factor stroke, IHD, peripheral vascular disease, congestive heart failure, renal failure, and dementia in all age groups, but in older patients it is SBP and widened pulse pressure that are the strongest predictors of adverse cardiovascular outcome.<sup>4</sup>

### Factors in the Age Related Increase in Blood Pressure<sup>5</sup>

- Arterial stiffness: Hypertrophy and loss of contractility of vascular smooth muscle cells, fibrosis, collagen deposition, fragmentation of elastic lamina, calcification.
- Decreased baroreceptor sensitivity
- Increased sympathetic nervous system activity
- Increased  $\alpha$ -adrenergic receptor responsiveness
- Endothelial dysfunction: decreased nitric oxide production
- Sodium sensitivity: decreased ability to excrete a sodium load
- Low plasma renin activity
- Insulin resistance
- Central adiposity

### Clinical Manifestations

- Fatigue
- Dizziness
- Palpitations
- Angina
- Dyspnea
- Headache and nosebleeds.

### Complications

- Hypertensive heart disease
- Cerebrovascular disease
- Peripheral vascular disease
- Nephrosclerosis
- Retinal damage

### Assessment

- Complete history- to assess the signs and symptoms that indicate target organ damage.
- Measure with a well maintained, calibrated device, with an appropriate sized cuff:
  - Check supine and standing BP (orthostatic hypotension can cause symptoms when treatment initiated.
  - Take at least two measurements in a single consultation
  - Never initiate treatment based on single reading

- Consider ambulatory measurements if drug resistance, variable BP, white coat hypertension, or postural symptoms.

- Examine for evidence of target organ damage (stroke, dementia, carotid bruits, cardiac enlargement, IHD, peripheral vascular disease, renal disease, retinal changes).
- Consider secondary hypertension rare in older patients, but consider if drug resistant, severe hypertension or with suggestive examination of laboratory findings.

### Diagnostic Considerations

- All new patients should have measurements of complete blood counts, serum sodium, potassium, bicarbonate, chloride, fasting glucose, blood urea, nitrogen, creatinine, uric acid, and calcium cholesterol screening should be performed should be performed.
- ECG
- Urinalysis
- lipid profile
- Echocardiography

### Nursing Management

The overall goals for the patient with hypertension are that the patient will

1. Achieve and maintain the goal BP
2. Understand and follow the therapeutic plan
3. Experience minimal or no unpleasant side effects of therapy
4. Be confident of the ability to manage and cope with this condition.

### Prevention Care

- Life style modifications as a important and effective in reducing BP in older patients as in the Young.
- Salt restriction
- Weight reduction
- Regular exercise are particularly effective
- Avoid alcohol intake
- Smoking cessation and decreasing saturated fat

intake helps with overall risk reduction.

- Proper diet care

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