Hypertension: Common in the Frail Elderly

The American Heart Association estimates that nearly one in three U.S. adults has high blood pressure.1 Because symptoms don’t manifest explicitly, nearly one-third of these people don’t know they have it. As a result, high blood pressure is often called the “silent killer.”2

It often leads to coronary artery disease and stroke. Studies estimate that 32 percent to 44 percent of the frail elderly in nursing homes have a diagnosis of hypertension or elevated blood pressure when measured.3,4 Sixty-five percent of these residents have more than three comorbid medical conditions that include coronary heart disease, congestive heart failure, cerebrovascular disease, diabetes, renal disease, dementia, orthostatic hypotension and obstructive airway disease.5,6 In addition, hypertensive residents of nursing homes take more than five medications daily.5,6

System Changes
Changes with aging can contribute to hypertension. There are various changes to the cardiovascular system associated with aging including arterial stiffening, left ventricular hypertrophy and declining stroke volume. In addition, there are changes in the renal system with aging, including shrinkage of the kidneys resulting in decreased filtration and electrolyte imbalances.

Hypertension also has an effect on the frail older person’s body systems. It accelerates the deterioration of certain organs such as the kidneys and other target structures. Hypertension also increases total peripheral resistance and accelerates congestive heart failure.

In the frail older person, particularly those in long-term care settings, hypertension is often undertreated. Management through medications is an important treatment intervention. Calcium channel blockers, diuretics and ACE (angiotensin-converting enzyme) inhibitors are most commonly prescribed. Typically, low-dose thiazide diuretics such as Diuril or Esidrix or long-acting calcium channel-blockers are preferred. There are potential risks of diuretic use to consider in this population. Common adverse reactions include dehydration, orthostatic hypotension and electrolyte abnormalities.

Treatment Considerations
How a person who is hypertensive is treated often depends on the severity of the disease. The National Heart, Lung and Blood Institute and the Seventh Joint National Committee on the Prevention and Treatment of High Blood Pressure in 2003 presented guidelines for defining and treating hypertension (see table).

When working with a hypertensive frail older person, it is important to monitor blood pressure. Ideally, to get a true picture of a person’s resting blood pressure, three readings should be taken after three to five minutes at rest for baseline and then averaged. It’s important to measure blood pressure from two positions (i.e., seated and standing) to measure potential orthostatic response. Orthostatic hypotension is determined when there is a 20 mm Hg (mercury) drop in blood pressure with a positional change with a 10-percent increase in pulse and symptoms such as balance loss or dizziness.

Exercise is generally contraindicated when systolic blood pressure is less than 80 mm Hg or greater than 180 mm Hg at rest, and/or when diastolic blood pressure is above 110 mm Hg. Exercise should be terminated when there is an orthostatic drop in blood pressure of more than 20 mm Hg or when blood pressure exceeds 200 to 220 systolic and 110 to 120 diastolic.

References

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Table 1: Guidelines for Defining and Treating Hypertension

<table>
<thead>
<tr>
<th>Blood Pressure Classification</th>
<th>Systolic Blood Pressure</th>
<th>Diastolic Blood Pressure</th>
<th>Diet and Exercise</th>
<th>Medication Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>&lt;80</td>
<td>Encourage</td>
<td>None</td>
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<tr>
<td>Pre-hypertension</td>
<td>120-139</td>
<td>80-89</td>
<td>Yes</td>
<td>No Drugs Indicated</td>
</tr>
<tr>
<td>Stage 1 Hypertension</td>
<td>140-159</td>
<td>90-99</td>
<td>Yes</td>
<td>Thiazide type diuretic</td>
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<tr>
<td>Stage 2 Hypertension</td>
<td>&gt;160</td>
<td>&gt;100</td>
<td>Yes</td>
<td>Two-Drug Combo</td>
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