

Problem: Orthostasis (≥ 20 mmHg drop in blood pressure) and dizziness on standing, with use of a diuretic or antihypertensive drug

Goal: No dizziness on standing and a smaller postural blood pressure drop

Solution:

1. **Collect clinical details**
 - What symptoms of orthostasis does the patient have?
 - What is the patient's blood pressure sitting (or lying) and standing?
 - What medications is the patient currently taking?

2. **Inform the physician**
 - ***If only on antihypertensive:***
 - a. Ask if doctor wants to consider any medication changes

 - ***If on antihypertensive and potentiating drug*** (see table of drugs):
 - a. Inform physician of potentiating drug(s)
 - b. Ask if physician wants to consider any medication changes

3. **Ask for follow-up instructions**

4. **Discuss with patient/caregiver:**
 - Patient countermeasures, e.g. rise slowly, etc. (see *Advice to Patient*).

5. **Repeat checks for orthostasis and related symptoms**

Background Information

Facts:

1. Orthostatic hypotension is defined as ≥ 20 mm Hg drop in systolic blood pressure on standing.
2. The prevalence of orthostatic hypotension increases with advancing age. It is a major cause of morbidity and mortality in elderly persons because it causes dizziness, fainting and falls. Patients may also develop a fear of falling and as a result, avoid activities.
3. It is more common in those with cardiovascular disease and hypertension.
4. Not everyone with orthostasis has symptoms, and many people who feel dizzy on standing do not have a large postural drop in blood pressure. However, symptoms usually occur with pathological orthostasis.
5. Orthostasis in elderly persons may be caused by a variety of factors, including diabetes and other chronic diseases which affect the autonomic nervous system. However, several commonly used groups of drugs produce postural blood pressure changes (see Table) and drugs are the most important avoidable cause of orthostasis.

Guidelines for Use:

- Drugs which may cause orthostasis should be started with low doses in elderly persons and increases in dose should be made in small increments. Postural blood pressure changes and symptoms should be monitored closely during dose changes.
- If possible, drugs should be taken at night while the patient is lying down.
- Be aware of other drugs the patient may be taking which can cause or increase hypotension or dizziness. In addition to the drugs listed in table 1 which cause orthostasis, sedatives, narcotic analgesics and alcohol may increase dizziness and unsteadiness.
- Any disease or condition which impairs mobility and results in periods of prolonged inactivity can produce orthostasis.
- A fall in blood pressure after a meal is common in elderly people. Symptomatic patients should be advised to avoid taking drugs which cause orthostasis before a meal. Small, frequent meals, a rest after eating and drinks containing caffeine (not recommended at night) may also help to reduce symptoms.

Groups of drugs which can cause orthostasis or make it worse		Examples	
		Generic name	Trade name
Antidepressants	cyclic antidepressants	amitriptyline doxepin imipramine nortriptyline	Elavil, Endep Sinequan Tofranil Aventyl, Pamelorl
	MAOIs	isocarboxazid	Marplan
Phenothiazines and other antipsychotics		haloperidol prochlorperazine thioridazine trifluoperazine	Haldol Compazine Mellaril Stelazine
Anti-Parkinson medications		levodopa/carbidopa	Atamet, Sinemet
Antihypertensives	alpha-adrenergic blockers	prazosin	Minipress
	beta-adrenergic blockers	atenolol metoprolol	Tenormin Lopressor
	centrally acting drugs	clonidine methyldopa	Catapres Aldomet
Vasodilators	calcium channel blockers	nifedipine diltiazem	Adalat, Procardia Cardizem, Dilacor
	nitrates	nitroglycerin products isosorbide di/mononitrate	Nitrostat, Nitrogard Isordil, Sorbitrate, Ismo
Diuretics		chlorothiazide hydrochlorothiazide metolazone bumetanide furosemide	Diuril Esidrix, Dyazide Zaroxolyn Bumex Lasix

References:

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3. Shafler M. *The Nurse, Pharmacology, and Drug Therapy*. 2nd ed. California: Addison-Wesley Nursing, 1993.
4. Tideiksaar R. Preventing falls: Home hazard checklists to help older patients protect themselves. *Geriatrics* 1986; **41**: 26-28.