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ORTHOSTATIC HYPOTENSION I SAW THE LOOK IN HIS FACE - THEN IT HAPPENED

Doctors are seeing more patients with IPD and atypical Parkinson's disease that have suddenly fallen while standing or changing their posture. This usually occurs after a very few steps. The result is that the patient experiences an unresponsive state or loses consciousness, falls, and can fracture the hip and other extremities or has head trauma. This is a dangerous event that occurs for many patients with Parkinson's. One of the more common reasons for a patient to go to the ER, in the last number of years, has been episodes of orthostatic hypotension that occur when a patient has been sitting or lying and suddenly stands up and has a fall. They go to the emergency room, either because of the trauma of the fall or because of the altered state of consciousness. Orthostatic hypotension, which is the physiological event that brings about the patients' symptoms, will occur when the patient stands and their blood pressure drops, particularly after getting up from bed in the morning or after a full meal, and there is resultant reduced cerebral hypo perfusion.

The heart is always tapping physiologically. This is the form of autonomic failure that is often seen in many neurodegenerative diseases, especially IPD and multisystem atrophy (MSA). Most patients with IPD have orthostatic hypotension (OH). It is often asymptomatic and the patient adapts to it quite well. However, if the patient has had significant dehydration, is currently ill, has cancer or other diseases, such as diabetes or atherosclerotic heart disease, or is advancing in age, the patient is prone to become symptomatic with a drop in blood pressure. Possible diseases associated with OH are diseases of the peripheral nerves. Pooling of the blood, in the lower extremities and in the abdomen, reduces venous return to the heart, and consequently, cardiac output is less. In patients with OH, the pooling cannot accommodate for the reduced amount of perfusion to the brain. Symptoms are described as lightheadedness, dizziness, pre-syncope (faint like), or syncope (loss of consciousness). A fairly sudden change in posture will, almost always, cause these symptoms to occur. The patient may complain of visual blurring, nausea, confusion, leg weakness, fatigue or pain that occurs in the shoulders, neck and posterior head (coat-hanger sign). These signs and symptoms are likely to occur and be more severe if the patient has been eating, standing for a long period of time, is in a hot environment or reduced their fluid intake.

OH is defined as a reduction in the systolic blood pressure to at least 20 mmHg, or a reduction in the diastolic blood pressure to 10 mmHg during the first three minutes of standing. This can be documented in a test called the *Tilt Table Test*. The test will indicate autonomic insufficiency and is a classic finding in patients with sympathetic vasoconstrictor failure. Usually in normal situations, the pulse will accommodate for the drop in blood pressure, however in people with OH, this will usually not occur. Some symptoms of OH can occur as long as three to five minutes after the patient has changed their posture, or if they had been standing for a significant period of time. Age, along with other co-morbidities, is a significant risk factor for OH.

The patient's family and caregiver need to be educated on this phenomenon to make them aware of its signs and symptoms; then, they can quickly lower the patient to a reclining position with the head lying below the heart. Often, this will prevent significant injury. In various studies, 15 to 40% of patients with IPD will have OH and, while some will not be symptomatic, commonly, most are. Dopaminergic medicines, such as

carbidopa/levodopa and dopamine agonist, play some role but most studies show that the severity and the pathology of the disease is mainly the bigger factor.

In the treatment of OH, we consider two important areas: non-pharmacological and pharmacological. The non-pharmacological approach deals with the education of each patient and their caregivers and may require behavioral changes for those patients who get up too often. They must learn to get up slowly, move their legs and stand, so they can sit down or lie down quickly if the symptoms occur. It is also important to have the patient maintain physical activity in a regular exercise program. Exercise has been shown to benefit patients and can reduce the propensity of having OH events. It is very important for the patient to remain well-hydrated and force fluids to at least eight glasses of water a day, and increase the plasma volume. Support hose can be helpful to reduce the pooling of blood in the lower extremities, however, with a Parkinson's patient, the stockings can be very hard to manage. Removal of diuretics or other antihypertensive medications can be a significant benefit to the patients who are having OH. It should be remembered that, at times, the patients with OH may have supine hypertension. It is important to reduce the amount of alcohol being consumed; if it is not contraindicated, adding salt can be of benefit in the treatment of OH.

In pharmacological treatment, it is important to make sure there is an adequate plasma volume, then look at the addition of Florinef or fludrocortisone acetate. Florinef is given in a 0.1 mg tablet and can be given up to three times a day. Midodrine or ProAmatine can be beneficial and should be gradually increased, since it may intensify the supine nocturnal hypotension. Rarely, ephedrine and pseudoephedrine is used. Pyridostigmine can also be used to improve the OH. Elevating the head of the bed reduces supine hypertension.

Education of the doctor and the patient; and making the patient aware of the signs and symptoms, are crucial in the management of these cases. The patient, family and caregiver should be reminded to immediately have the patient lay down if they notice any usual symptoms, as it can precede the pre-syncope or syncope. These precautions will help to preserve the patient's safety, and could prevent injuries and falls.

Northera (droxidopa) (100mg-200gm-300mg) is the newest drug for OH. I use this often, increasing water consumption, behavior modification as well as Florinef and Midodrine is used. Northera can be expensive and difficult to get authorized by insurance. Blood pressure monitoring is important, especially for supine hypertension occurring at night. In studies, it was used with Florinef in some cases. Uncertain about co use with Midodrine, but this has to be used with caution, especially for hypertension. Adjustment of Dopa decarboxylase maybe needed.

There are various titration schedules, all are given three times a day, early a.m., midday and late afternoon, 3-5 hours before bedtime. Start at 100mg a day and gradually increase to 300 to 600mg per day as tolerated. Monitor blood pressure. Adverse side effects are supine hypertension, neuroleptic malignant syndrome (fever, muscle rigidity, involuntary movements, altered consciousness and mental status changes). Ischemic heart disease, arrhythmias and congestive heart failure are a concern. Headaches, dizziness and nausea occur in 6-14% of cases

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