

Perceiving Parkinson's

Autonomic Dysfunction In Parkinson's (Day 45)

Recall that Parkinson's is a disease of neurons, not just brain - the autonomic system is also affected. The involvement of this nervous system produces a variety of non-motor symptoms, often before the motor symptoms appear. Autonomic dysfunction is an **essential feature** of Parkinson's.

The **autonomic nervous system** consists of specialized neurons within the spinal cord that branch out to innervate various internal organs; it controls internal body functions such as heart rate, blood pressure, urination, sexual functions, and sweating. In Parkinson's, there may be a **profound** loss of these neurons resulting in four main autonomic non-motor symptoms - postural hypotension, lost urinary control, erectile dysfunction, and excessive sweating.

Postural Hypotension

Postural hypotension occurs in **30-40%** of people with Parkinson's; this is when a person's blood pressure falls upon standing. The "normal" blood pressure is **120/80 mmHg**. In postural hypotension, there is a fall in systolic blood pressure (the first number) of **over 20 mmHg**, or a fall in diastolic blood pressure (the second number) of **over 10 mmHg**, when a person gets up from a lying to a standing position. On standing, a person with postural hypotension suffers a temporary drop in blood supply to the brain and may experience **dizziness, visual problems, or cognitive impairment** for up to several minutes. If the postural hypotension is severe, the person may even suffer **loss of consciousness**, followed by a fall.



Postural hypotension is assessed by measuring the blood pressure in lying and standing positions.

Postural hypotension can be tricky to **manage** in Parkinson's:

(1) First, postural hypotension may result from either the dopaminergic oral medications (especially levodopa) or the Parkinson's. If the medications are suspected, they may need to be altered. If the Parkinson's is suspected, the best treatment is to **increase water and salt intake**; increasing salt intake

may seem like a strange thing to do, since people with high blood pressure are told to decrease their salt intake, but in postural hypotension it is important to increase salt intake.

(2) A weaker strategy is to **elevate the head end of the bed** by 15 centimeters; this will offset low blood pressure levels in the morning.

(3) Alternatively, **compressive stockings** that go up to the thigh or waist and **abdominal bands** are both effective; unfortunately, most people cannot tolerate either for more than a few weeks.

(4) If all else fails, medications such as **fludrocortisone** and **midodrine** can be used at the risk of their side-effects of headache, flushing, and high blood pressure episodes.



To avoid postural hypotension, adequate salt intake is essential.

Lost Urinary Control

Lost urinary control occurs in **over 60%** of people with Parkinson's and can manifest as hesitancy, urgency, urinary incontinence, or nocturia. **Hesitancy** implies difficulty in initiating urination; it may seem like it takes forever to empty the bladder, and it may not empty completely. **Urgency** implies a heightened need to urinate, even when the bladder is not full. **Urinary incontinence** refers to leakage of urine at times when it is not appropriate. **Nocturia** is an excessive urge to urinate during the night that triggers awakening; since it interferes with sleep, nocturia is particularly vexing in Parkinson's.

Lost urinary control is one of the most difficult symptoms to **manage** in Parkinson's:

(1) Some people respond to the anticholinergic medication **oxybutynin** which relaxes an overactive bladder; potential side-effects of oxybutynin are dry mouth, constipation, and memory impairment.

(2) If that does not help, a workup by a **urologist** may be required followed by a urological procedure.

(3) Nocturia can sometimes be reduced by **optimizing levodopa cover at night, avoiding liquids and diuretics after dinner, and emptying the bladder before bed.**

(4) Trips to the bathroom at night can also be prevented by **keeping a hand-held urine container near the bed.**

Erectile Dysfunction

Erectile dysfunction is **common** in men with Parkinson's and refers to problems in achieving and maintaining an erection. Many neurologists do not routinely ask about this autonomic symptom. It should also be noted that women with Parkinson's may experience sexual dysfunction too, but the association with Parkinson's is not as clear.

Erectile dysfunction can also be difficult to **manage** in Parkinson's:

- (1) Since sexual performance is diminished and therefore may be next to impossible during the "off" state, **optimizing levodopa cover** may be all that is required.
- (2) If this does not solve the problem, the next step is to optimize **exercise, relaxation, and sleep**.
- (3) If that fails, the medication **sildenafil** is helpful; there may be transient side-effects of headache, flushing, and heartburn.

Excessive Sweating

Excessive sweating in a person with Parkinson's may occur in the palms or the feet - in more severe cases, it may manifest as drenching night sweats which are especially problematic in Parkinson's.

Excessive sweating can be **managed** several ways in Parkinson's:

- (1) The first thing to try is to **alter the dopaminergic oral medications**, especially levodopa.
- (2) It is helpful to **drink lots of fluids, take lukewarm showers, and wear light cotton clothes**.
- (3) If the sweating is severe, as in drenching night sweats, the beta-blocker medication **propranolol** is beneficial in some people; side-effects include fatigue and postural hypotension.

Autonomic dysfunction affects most people with Parkinson's to one degree or another. If you suffer from postural hypotension, lost urinary control, erectile dysfunction, or excessive sweating, hone in on that symptom and **try the strategies outlined above**.

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References

- (1) Ahlskog. 2015. The New Parkinson's Disease Treatment Book. Oxford University Press.
- (2) Sveinbjornsdottir. 2016. The clinical symptoms of Parkinson's disease. Journal of Neurochemistry 139(Suppl. 1), 318-324.