



Depression or Sadness ? Let's Talk About Neurochemicals

Dr. Richard L. Bruno, HD, PhD
Director, International Centre Polio Education
www.postpolioinfo.com

Question: I have had PPS for eight years and just got a brace and cane. I know I waited too long because I had to go on SSDI (Social Security Disability) last year due to fatigue and poor concentration. I get sad sometimes when I think about what's happened. My doctor says I am very depressed and wants to give me Adderal for my poor concentration and venlafaxine and mirtazapine for depression. Dr. Bruno warns us to "never mess with dopamine producing neurons or dopamine receptors in the brain" This makes me wonder if I should take venlafaxine and mirtazapine. Aren't these dopamine enhancers?

Answer:

First, venlafaxine and mirtazapine aren't dopamine enhancers or receptor stimulators; they increase serotonin and norepinephrine in the brain. But more on neurochemicals later.

Second, if you weren't "depressed" about having PPS and leaving work you would be crazy. Imagine someone having to wear a brace, get a cane and stop working and liking it?

But feeling sad or "depressed" and clinical depression are not the same. In our 1995 International Post-Polio Survey, just over half of the polio survivors told us they were sad while nearly a quarter said they had been diagnosed with depression. Depression -- what's clinically called a "major depressive episode" -- is a medical condition with specific symptoms in addition to feeling sad or even "depressed." A diagnosis of a major depressive episode requires that you experience decreased enjoyment, an inability to sleep or an inclination to sleep too much, decreased activity during the day, fatigue or loss of energy, inability to think clearly or concentrate, decreased appetite, feelings of worthlessness or guilt and maybe thoughts of suicide, in addition to feeling sad. Just over 60% of The Post-Polio Institute patients report that they don't enjoy life the way they used to; about half report they're sad, anxious, critical of and disappointed in themselves; just over a third say they have decreased interest in other people and cry frequently; about a quarter report decreased appetite and increased guilt. In spite of these symptoms, less than 5% of our patients report enough of symptoms to be diagnosed as having a major depressive episode.

It's also interesting that polio survivors don't report that they are sad, let alone depressed, when they develop muscle weakness, muscle pain or joint pain, even if these symptoms are severe. Sadness and the symptoms of a major depressive episode -- decreased enjoyment, poor appetite and increased guilt -- appear only when PPS symptoms interfere with polio survivors' ability to work, meet social obligations and care for themselves or their homes. That is, polio survivors get depressed when they can't be "Type A" any longer.

You may have noticed that all of the symptoms of a major depressive episode -- except for decreased appetite, thoughts of suicide and possibly worthlessness -- are also commonly reported symptoms of PPS. So, if your doctor thinks you're depressed, it is vital that he understand the overlap between symptoms of depression and PPS, and that he rule out all treatable causes for depression, such as having a slow thyroid, anemia and sleep apnea. These conditions should be treated before an antidepressant is prescribed.

Antidepressants for Polio Survivors.

What about antidepressants you ask? We treat depression with psychotherapy and the overwhelming majority of patients get better quickly without medication. But there is no reason that polio survivors shouldn't take an antidepressant if they truly need it. The newer antidepressants, the SSRIs – selective serotonin reuptake inhibitors such as Prozac, Paxil, Zoloft and Celexa – which increase serotonin in the brain, are effective and have fewer side effects than the older tricyclic antidepressants. Tricyclics such as Elavil (amitriptyline) cause dry mouth, constipation, can make your blood pressure drop when you stand up and make you sleepy. SSRIs on the other hand are somewhat stimulating but can cause insomnia, nausea and decreased sexual interest or ability.

The even newer, non-SSRI antidepressants that increase both serotonin and norepinephrine are also effective. Mirtazapine, venlafaxine and trazodone are sedating and may help polio survivors in whom insomnia is a symptom of depression. They may also be used to treat insomnia in those very few circumstances when polio survivors need a sleeping pill, such as when they start using a positive airway pressure machine (BiPAP or volume ventilator) to treat sleep apnea. The combination of mirtazapine and venlafaxine has been suggested as an option for difficult to treat depressive illness.

But Wellbutrin does stimulate dopamine receptors and can cause agitation and even aggression in polio survivors and should not be used. Which brings us to dopamine. Dopamine is *the* brain activating neurochemical and is what polio survivors don't have enough of. Using any stimulant – Adderall, Ritalin, Provigil, amphetamines – “squeeze” and overload poliovirus-damaged brain neurons (just as exercise does to spinal cord motor neurons) forcing them to pump out more dopamine and should not be used to treat problems with attention or fatigue itself. Although Provigil is used by some polio survivors, two separate double-blind, placebo-controlled studies show it has no effect on post-polio fatigue but it will keep polio survivors “wired” and awake when they really need to sleep.

Regardless of the approach -- therapy alone or therapy plus medication -- treating depression is doubly important in polio survivors, not only because depression should always be treated, but also because depression is a major cause of patients refusing treatment for PPS. We found that just over 60% of Post-Polio Institute patients who refused *any* treatment, and 50% of those who started treatment but quit or were discharged for non-compliance, had an untreated major depressive episode. If a polio survivor is too depressed to begin or continue treatment, physical therapies should stop and psychotherapy -- and even an antidepressant -- should be started right away.

