



The Duomo - Florence, Italy

PIC QUESTION OF THE WEEK: 10/31/11

Q: Can SSRIs cause an increase in intraocular pressure and result in glaucoma?

A: Glaucoma is a heterogeneous disorder characterized by injury to the optic nerve and visual disturbances. Signs and symptoms associated with acute attacks of narrow-angle glaucoma include redness, blurred vision, possible halos when looking at lights, lacrimation, periocular congestion, and significant pain. Glaucoma results from an increase in intraocular pressure (IOP) and other risk factors. IOP, also referred to as ocular hypertension, is associated with an imbalance in the production and elimination of aqueous humor. Psychotropic medications identified as causes of glaucoma include: tricyclic antidepressants (TCAs), antipsychotics, serotonin and norepinephrine reuptake inhibitors (SNRIs), and serotonin selective reuptake inhibitors (SSRIs). SSRIs are commonly prescribed for the treatment of major depressive disorder as well as various types of anxiety syndrome. They are considered first-line treatment in these conditions because of their low adverse effect profile and enhanced efficacy relative to other antidepressants. SSRIs have been associated with chemically induced glaucoma, yet are the least frequently implicated of the psychotropic medications. Increased IOP has been considered an unusual adverse effect of this class of medications; however, recent studies suggest that chemically induced glaucoma is not rare in patients taking SSRIs. Post-marketing surveillance of several SSRIs has revealed numerous cases of ocular hypertension, mydriasis, and glaucoma. Two mechanisms are proposed glaucoma secondary to SSRIs. The first is a result of the anticholinergic properties of these drugs, primarily paroxetine (Paxil) that results in mydriasis. A second etiology is based on the direct effects of serotonin on the 5-HT₇ and 5-HT_{2a/2c} receptors in the eye that produce relaxation of the pupil and passive dilation. This effect is countered by the 5-HT_{1A} receptor which contracts the muscle. However, when both receptors are simultaneously stimulated, the predominant effect is mydriasis. In addition, stimulation of the 5-HT_{2a/2c} receptors stimulates ciliary body blood flow resulting in enhanced production of aqueous humor and increased IOP. Many patients may experience only asymptomatic mydriasis, but others already at risk may develop symptomatic ocular hypertension and glaucoma after use of SSRIs. Venlafaxine, an SNRI, has been identified as a cause of acute glaucoma in a number of case reports. Patients with a history of glaucoma should be monitored closely when prescribed SSRIs or SNRIs.

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