

Tinnitus Treatment With Mirtazapine

Tinnitus is a common symptom with a point prevalence of about 10% and as many as 30% adults having some tinnitus experience.¹ We wish to report a case of emergence of tinnitus on sertraline therapy. Neither reduction nor complete withdrawal of sertraline showed any improvement in tinnitus. However administration of mirtazapine resulted in complete amelioration of this symptom.

To the best of our knowledge, successful use of mirtazapine, a noradrenergic and specific serotonergic antidepressant, in cases suffering from tinnitus, is not mentioned in the existing literature.

A 48 year old married man presented with history of major depression as per DSM IV criteria, of four months duration, and treated successfully with sertraline 150 mg/day along with alprazolam 0.5 mg/day. After maintaining this regime successfully for 8 weeks alprazolam was tapered and stopped. At week 16 of sertraline therapy (150 mg/day) the patient started reporting a sensation of ringing in both the ears. It was distressing and causing disturbances in socio-occupational functions. The ringing sound would last 7-8 hours per day and there was no history of hyperacusis. There was no history of tinnitus or ear problem prior to administration of sertraline. There was no history suggestive of a triggering factor responsible for this onset of tinnitus. Ear nose and throat examination did not show any local pathology or findings suggestive of otitis media. Audiometry report was also within normal limit.

The dose of sertraline was tapered and stopped over a period of 4 weeks without any improvement in the symptoms of tinnitus. A four week trial of buspiron 20 mg/day and clonazepam 2mg/day was given at different times without any positive results. Subsequently mirtazapine 15 mg/day was started and at the end of three weeks of mirtazapine therapy his tinnitus dramatically improved. Withdrawal of mirtazapine again resulted in reappearance of his tinnitus. This further improved when mirtazapine 7.5 mg was restarted. The patient has been maintained on this dose of mirtazapine for the last 6 months without re-emergence of tinnitus. An additional, marked improvement, in the quality of life was demonstrated while on treatment with mirtazapine. On three separate occasions the patient stopped taking mirtazapine with reappearance of tinnitus symptoms within four days of withdrawal of mirtazapine.

While tinnitus has been reported as a side effect of antidepressant medication, several studies have also demonstrated the benefit of antidepressant therapy in improving the symptoms of tinnitus and antidepressants continue to be the most commonly prescribed medications for treatment of tinnitus.² In contrast to our report where tinnitus was associated with sertraline, a double blind placebo controlled study demonstrated the effectiveness of the sertraline for the management of tinnitus.³ However, a Cochrane Review showed that there is no sufficient evidence to suggest that antidepressant drugs such as SSRI, trazodone and tricyclic antidepressant therapy improve tinnitus.⁴

A PUBMED search on tinnitus and mirtazapine (as on 4-4-2011) did not reveal any report of either tinnitus induced by or successfully treated by mirtazapine.

Auditory pathways are modulated by various neurotransmitters such as serotonin responsible for sound detection, location, and interpretation. The neurotransmitter gamma amino butyric acid (GABA) is inhibitory in the auditory system. Given that there is preferential innervation of the GABAergic neurons in the inferior colliculus by serotonergic neurons, it may be plausible then that antidepressant drugs, by increasing the availability of serotonin and thereby increasing GABAergic activity, provide relief from the symptoms of tinnitus.⁵ This report shows that mirtazapine may have a beneficial effect in the subgroup of patients suffering from tinnitus but exact mechanism is difficult to put forward.

References

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