Atypical antipsychotics for the treatment of musical hallucinations in an elderly patient without a psychiatric disorder

Sir,

Musical hallucinations (MHs) have been described in the psychiatric, neurologic, and otolaryngologic literature as a relatively rare form of auditory hallucinations with heterogeneous clinical and pathophysiological origin.\(^\text{[1]}\) The exact prevalence of this symptom is not known, but in certain populations, such as older patients with hearing impairment, it has been estimated as high as 2.5%.\(^\text{[2]}\) Among etiological factors which have been cited in the literature as inducing MHs, the most common are acquired loss of hearing ability or deafness\(^\text{[1,3]}\) and it has been suggested that MHs may represent an auditory form of the Charles Bonnet syndrome.\(^\text{[1]}\) Other possible etiological factors are psychiatric disorders, epilepsy, focal brain lesions, and intoxication.\(^\text{[3]}\) Less is known about the treatment of MHs, as there are no clinical trials and treatment relies heavily on clinical judgment and the limited published case reports.\(^\text{[4]}\)

Here, we report a case of an older male patient, without a psychiatric disorder who developed MHs in the context of bilateral, asymmetrical hearing impairment, and was treated effectively with atypical antipsychotics. The patient was examined and treated in a primary care setting by a community mental health-care service.\(^\text{[5,6]}\)

Mr. A, a 78-year-old right-handed male, presented to our service with the chief complaint of musical auditory hallucinations comprising traditional songs and religious hymns. These MHs started 1 month prior to the first examination, and have been too loud and annoyed for the patient, and caused significant distress. According to his history, he had a bilateral hearing impairment, diagnosed as a sensorineural hearing loss for almost 35-years, mostly involving the left side, but he did not use a hearing aid because he could not tolerate any amplification device. He also had arterial hypertension and atrial fibrillation...
and was receiving a long-term treatment with an anticoagulant agent. No history of epilepsy or alcohol misuse was recorded. Apart from MHs, there were no other psychotic symptoms, including no delusional belief related to MHs. The patient was afraid that he was going to “lose his mind just like his wife” (his wife, a woman with a chronic schizophrenia, had deceased 3 months prior to the first presentation). The patient was thoroughly evaluated for symptoms and syndromes that could have been developed in the context of his loss, such as brief psychotic episode, depression with psychotic symptoms, and complicated grief, bearing in mind that depression may present with atypical forms in the elderly. The mental state examination ruled out all these diagnoses, as the patient did not display any psychiatric symptoms, apart from MHs, and his functioning was preserved at the previous level, as he continued to engage in everyday activities without difficulty. Nor the patient complained of symptoms compatible to atypical presentation of depression, such as somatic complaints or cognitive disturbance. Examination of the cognitive function of the patient was also performed. He scored 29/30 on the mini-mental state examination and a further clinical assessment of cognitive domains such as complex attention, executive function, learning and memory, language, perceptual-motor abilities, and social cognition-excluded cognitive impairment or dementia. The patient was relieved by the reassurance on the benign nature of the phenomenon, and he was referred for physical examination and laboratory investigation. He was also underwent an audiogram and a magnetic resonance imaging (MRI) of the brain. The audiogram confirmed the hearing impairment and the MRI did not reveal any pathological findings. Given the views that MHs may represent an auditory form of the Charles Bonnet syndrome,\textsuperscript{[1]} and the reports on the possible effectiveness of selective serotonin reuptake inhibitors (SSRIs) for this syndrome\textsuperscript{[7]} the patient was prescribed citalopram titrated up to 20 mg daily for a month, despite the exclusion of any depressive syndrome. The drug was well tolerated but ineffective for his symptoms. After the full explanation, the patient accepted to receive antipsychotic drug treatment, and risperidone was initiated 0.5 mg daily, and was gradually titrated up to 3 mg daily. Risperidone is an effective antipsychotic which is commonly prescribed in elderly patients.\textsuperscript{[8]} This regimen reduced the symptoms significantly within 2 months, but the patient developed extrapyramidal side effects and thus, risperidone was replaced by olanzapine 5 mg daily. MHs were almost eliminated and the patient, 10 months after the first presentation, has only slight and nondisturbing intermitted hallucinations which do not cause any distress. Most of the time, there is no perception of MHs. Interestingly, after improvement of his symptoms the patient could locate MHs in the left side, where the most severe hearing impairment is.

Treatment of MHs has not been studied systematically. It has been suggested that addressing the hearing deficit with hearing aids may improve or eliminate MHs,\textsuperscript{[4]} but our patient could not tolerate any hearing amplification device. There are views of MHs as an auditory analog of the Charles Bonnet syndrome in patients with hearing impairment,\textsuperscript{[1]} and in this context, SSRIs such as citalopram, could be a rationale treatment option for our patient.\textsuperscript{[7]} However, symptoms did not remit even slightly with citalopram but were almost completely abated with two different atypical antipsychotics.

In a recent report of three cases, patients’ MHs responded to low-dose antipsychotic drug treatment, but all these patients had developed MHs in the context of a psychotic disorder (psychotic depression, bipolar disorder, and schizophrenia, respectively).\textsuperscript{[9]} In our case, the patient had no other psychotic symptoms, apart from the MHs, and a detailed clinical assessment ruled out any psychiatric disorder. The exact pathophysiological basis for MHs is not understood, but recently Kumar et al.\textsuperscript{[10]} proposed that a crucial brain circuit in the generation of MHs involves the left anterior superior temporal gyrus and the motor and posteromedial cortex. Presumably, antipsychotic drugs in this patient restored the underlying aberrant process at the neurotransmission level and almost eliminated the symptom of MHs. However, the exact mechanism of action of these agents in this and other cases is unknown. Another difference from the case series of Mansoor and Ganzini\textsuperscript{[9]} was the time course of MHs improvement; in their series, the response to antipsychotics was rapid and complete, whereas in our patient improvement was progressive and continued over several months of antipsychotic treatment but without complete resolution.

In a recent review of the literature on the treatment of MHs, Colon-Rivera and Oldham\textsuperscript{[4]} found four cases of successful treatment with olanzapine 2.5–10 mg daily but all those patients had a psychiatric disorder. Two cases of successful quetiapine treatment involved patients without a psychiatric disorder. Our case highlights the effectiveness of atypical antipsychotics in the treatment of MHs in older patients. This and a few previous cases favor the use of atypical antipsychotics for the treatment of MHs in patients without a psychiatric disorder, but further research is needed to determine any usefulness. However, clinicians should take into account the association of these agents with potentially serious adverse effects in this vulnerable population and balance the risks and
benefits when prescribing antipsychotic medications for older adults.\(^{[11]}\) Given the lack of evidence regarding effective treatments for this distressing condition, atypical antipsychotics may be considered for the treatment of MHs.

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There are no conflicts of interest.

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**References**


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