Reminder of important clinical lesson

Risperidone induced weight gain leading to benign intracranial hypertension

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Benign intracranial hypertension (BIH) is a condition which is strongly associated with weight gain. A well-known potential adverse effect of anti-psychotic treatment, especially the atypical group, is weight gain. Our case describes the use of risperidone in a young obese lady who gained significant weight after commencing the antipsychotic and later developed headache and blurred vision. Withdrawing the offending drug (causing reduction in her weight) in addition to acetazolamide drastically improved her symptoms within a month. Our case highlights that, obese patients started on antipsychotic medication, who develop headache, should be considered for investigation of BIH.

BACKGROUND

This report indicates the potential complication of starting patients on risperidone without appropriate monitoring of weight gain. Antipsychotics are reported to cause weight gain, in varying amounts. We believe that, there is limited general awareness on the 'shop floor' of this side effect of risperidone and its consequence, leading to benign intracranial hypertension (BIH). We hope to highlight this with our case-report and encourage clinicians to keep an open mind and investigate headache in this group of patients.

CASE PRESENTATION

A 22-year-old obese Caucasian woman presented to the hospital with a 3-week history of headache, nausea and persistent blurred vision. On examination, she was morbidly obese with a weight of 159 kg and body mass index (BMI) of over 40. She had a visual acuity of 6/6 in both eyes with normal pupillary reactions but bilateral diplopia on lateral gaze. A left sided sixth cranial nerve palsy was diagnosed. Retinal vessel collapse was noted but no papilloedema was identified. She had a medical history of bipolar disorder and was on risperidone 1 mg once daily and sertraline 100 mg once daily.

Investigative brain imaging, both CT scan and MRI, were normal. Subsequent lumbar puncture (LP), performed under anaesthetic, revealed a cerebrospinal fluid (CSF) opening pressure of > 40 cm H₂O with normal CSF composition. As a result of the LP, the headache had reduced however, the blurred vision remained.

OUTCOME AND FOLLOW-UP

BIH was diagnosed and acetazolamide 250 mg twice a day was initiated and was increased to a maximum of 500 mg twice a day 3 months later. She revealed that, her excessive weight gain had occurred in the period over the last 12 months while, she had started risperidone. This was discontinued during her hospital admission and changed to quetiapine. She was encouraged to start a weight reduction programme to aid with her symptoms.

This lady was reviewed 1 month later and had significantly improved with a reduction of her diplopia and headache and no ensuing papilloedema was noted. Six months of treatment had resolved her diplopia and majority of headache. She is under follow-up by neurologists and ophthalmologists.

DISCUSSION

BIH is characterised by raised intracranial pressure in the absence of intracranial mass lesion or ventricular dilatation with normal CSF composition. Similarly, neurological findings, on examination, are normal except papilloedema and sometimes sixth cranial nerve palsy.¹ Normal brain imaging is characteristic of this condition.¹

BIH is more common in women than men (8:1), especially during the child-bearing age. Obesity is common feature with 90% of patients² and studies reflect that, higher levels of weight gain and BMI are associated with greater risk of BIH.³ In fact, even non-obese patients with BMI <30 are more at risk in the context of moderate weight gain.³ The most common symptoms are headache and visual disturbance.

Antipsychotic medications, especially the atypical group,⁴ have widely been documented to cause weight gain, although amount of gain is variable among individuals and specific agent used.⁵ Both genetic and non-genetic factors have been implicated to affect antipsychotic related weight gain⁶ but precise biological mechanism is still largely unknown.⁵

A comprehensive and systematic literature search of weight gain associated with risperidone suggested that, weight gain was more pronounced in preadolescent years and decreased with age. Adults over 65-years of age hardly had any medication induced weight gain.⁷ One controlled study looking at weight gain with risperidone in children, adolescents and adults with mental retardation and autism cited a mean weight of 8.2 kg, 8.4 kg and 5.4 kg in the respective groups.⁸ A meta-analysis of 26 cohorts of risperidone treated adults revealed a mean weight gain of 2.1 kg in a 10-week period.⁹

Recommendations for treatment of BIH are limited by lack of randomised control trials. However, management consists of medical treatment and surgical intervention in certain cases. The main feature of medical management entails reduced sodium weight reduction programme and use of diuretics such as acetazolamide.² Weight reduction has shown to improve symptoms in adult patients¹ but not always visual loss. One study showed that, weight loss is associated with more rapid recovery of visual defect as compared with those who did not lose weight.¹⁰ In our patient, the cessation of the implicated exacerbating medication and commencement of diuretics provided both therapeutic relief and benefit.

Although we were not able to find any specific reference where use of antipsychotics has directly led to development of BIH, it is reasonable to deduce that commencement of risperidone further aided in weight gain in our patient. This in turn, knowing what we do about weight gain and BIH, may have contributed to the development of her condition. We further suggest that, obese patients on antipsychotics should be monitored for weight gain related sequelae such as BIH. Headache in this group of patients should be investigated more thoroughly to prevent long-term visual problems and potential contributing factors such as weight gaining medication should be identified and possibly discontinued.

Learning points

- ▶ Risperidone and other antipsychotics can lead to increase in weight.
- ▶ It is important to advise patients about potential weight gain.
- ▶ Weight should be monitored in such patients.
- ▶ Clinicians should consider BIH as a cause of headache in patients who have started risperidone and have gained weight.

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