Novel treatment (new drug/intervention; established drug/procedure in new situation)

Life-threatening hyponatraemia and intramuscular olanzapine: the world's longest therapeutic trial

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Summary

This case report provides a different perspective on the management of a patient with a psychotic illness. The detained patient, a man aged 50, had specific delusional beliefs about toxins affecting his kidneys, such that he needed to drink water to 'detoxify' himself. This resulted in him developing life-threatening hyponatraemia. It became clear that he was very resistant to taking oral medication and was reluctant to engage with any psychological treatment. A novel approach was considered, involving the 'off licence' use of short acting intramuscular olanzapine for the successful treatment of the psychotic illness. The case demonstrates the safe use of intramuscular olanzapine for 155 days, which is the longest reported case for the use of intramuscular olanzapine for the treatment of a psychotic illness. The individual was later discharged on oral olanzapine.

BACKGROUND

This case report provides an unusual perspective on the management of a patient with an acute psychotic illness, namely schizophrenia. Schizophrenia is a mental illness that affects around 1 in 100 people in the course of their life. Schizophrenia is one of the top ten medical disorders causing disability.¹ Mortality among people with schizophrenia is approximately 50% above that of the general population, partially as a result of an increased risk of suicide (about 10% die by suicide), violent death and partly as a result of an increased predisposition to a wide range of physical health problems and reduced access to general medical services. The association between schizophrenia, poor physical health and increased mortality has been well established.^{2 3}

Hyponatraemia secondary to psychogenic polydipsia is an uncommon but well-recognised clinical problem.^{4 5} Psychogenic polydipsia is associated with mortality, morbidity and increased healthcare costs.

Short acting intramuscular olanzapine was made available in the UK and Europe in February 2004 and was the first licensed atypical available in Europe as a short acting intramuscular formulation. It is licensed in the UK for rapid tranquilisation for the treatment of acute agitation in schizophrenia and bipolar disorder.

We report on what is believed to be the longest trial of short acting intramuscular olanzapine used for the treatment of schizophrenia with secondary hyponatraemia. This is a report compiled prior to the introduction of depot olanzapine in a case where its use would not, at least initially, have been appropriate.

CASE PRESENTATION

The patient was a 50-year-old male who has suffered paranoid schizophrenia for a number of years. One of the key features of his presentation included a belief that his kidneys were dysfunctional and that he needed to 'flush' them out with water.

On admission under Section 3 of the Mental Health Act 1983 (detention for treatment), he presented with hyponatraemia. This required regular electrolyte monitoring and close physical and nursing observation. He was initially treated with aripiprazole with good effect but later began to refuse this treatment. A test dose of intramuscular haldol 5 mg was given, prompting acceptance of his oral aripiprazole 10 mg twice daily. After an improvement in his thought disorder, he was encouraged to have escorted leave. However, his delusional beliefs remained fixed and after he was offered an increased dose of aripiprazole he refused all oral medications. Clozapine, oral flupenthixol and risperidone were all prescribed but refused. He would not engage with psychological treatment and required very close observations, fluid monitoring; at one point he was suspected to be drinking water from the toilet. His diet became increasingly restricted as he excluded a wide range of foodstuffs in response to his hypochondriacal delusions.

A second opinion approved doctor (SOAD) from the Mental Health Act Commission approved the use of intramuscular flupenthixol decanoate. However, 1 month after its commencement, the patient appeared very depressed and stated that he wanted to die. He initially agreed to continue with aripiprazole but soon became non-compliant, prompting a change to long-acting risperidone (risperdal consta). The dose of risperidone was increased but was poorly tolerated with extra pyramidal side effects, for which he would not take anticholinergics, and with no therapeutic benefit. Weight loss, due to his very poor diet secondary to his delusional beliefs, became severe. Electroconvulsive therapy was suggested but the SOAD suggested a course of antidepressant. He did not comply with the oral antidepressant (mirtazepine 30 mg once daily) and a week after this was started, he collapsed with a hyponatraemia of 90 mmol/l. He required ventilation in intensive therapy unit and suffered a post admission pneumonia. Within 2

weeks, he had a further collapse prompting another medical admission with a further episode of hyponatraemia.

A decision was made, again approved by a SOAD, to commence olanzapine velotabs 5 mg daily with intramuscular olanzapine as an alternative if the oral medication was refused. The olanzapine was gradually titrated to 10 mg once a day for both the velotabs and intramuscular forms. The patient persistently refused the oral olanzapine and required a prolonged course of short acting olanzapine injections.

He made a sustained improvement and tolerated the olanzapine well but required intramuscular olanzapine for a total of 155 days, which is the longest reported use of intramuscular olanzapine for the treatment of a psychotic illness.^{6 7} The only side effect was a short period of post injection hypotension, which resolved after a few doses and was felt to be due to his poor physical condition. The intramuscular olanzapine was otherwise very well tolerated for a prolonged period. Given his poor physical condition great care would have been needed in prescribing a long-acting injection without knowledge of how he would respond; the post injection syndrome associated with long-acting olanzapine could potentially have caused serious physical sequelae in this case. The patient was eventually transferred to a rehabilitation unit, began taking oral olanzapine, and was discharged to new independent accommodation with support from the community mental health team.

INVESTIGATIONS

Regular electrolyte monitoring; daily at times.

DIFFERENTIAL DIAGNOSIS

The main differential diagnoses that were considered included:

- ▶ F20.0 paranoid schizophrenia,
- ▶ F30.2 mania with psychotic symptoms and
- ▶ F06.2 organic delusional (schizophrenia-like) disorder

It was felt that the patient's symptoms were consistent with paranoid schizophrenia.

TREATMENT

Several different antipsychotic medications were used both oral and intramuscular but with little success. The patient was trialled on a number of newer and older antipsychotics and refused a number of prescribed medications including clozapine. The most effective antipsychotic for treatment and tolerability appeared to be olanzapine.

OUTCOME AND FOLLOW-UP

The patient, initially detained under section 3 of the Mental Health Act 1983, was successfully treated using the above treatment plan: transferred from an assessment ward to a rehabilitation ward, prior to being discharged.

At present, he is living in rented accommodation in the community with support from the local assertive outreach team. The patient has been in the community for approximately 4 years and he is compliant with his prescribed medications.

DISCUSSION

This represents the longest ever use of short acting olanzapine for the treatment of an acute psychotic episode. There have been no similar case reports in the past. In this case, the patient refused a number of different medications but found the regime involving daily short acting olanzapine injections the most tolerable and appeared the most effective in the management of his psychotic symptoms.

This case illustrates that short-acting olanzapine injections could safely be used for a prolonged period if necessary, for example in assessing therapeutic response before commencing long-acting olanzapine, particularly if comorbid physical conditions make additional precautions necessary.

Learning points

- ▶ Psychogenic polydipsia is a known but uncommon complication in patients with a mental illness.
- ▶ Short-acting intramuscular olanzapine is licensed for rapid tranquilisation for the treatment of acute agitation in schizophrenia and bipolar disorder.
- ▶ The case illustrates that short acting olanzapine injections could safely be used for a prolonged period if necessary, for example in assessing therapeutic response before commencing long-acting olanzapine.

Competing interests None.

Patient consent Obtained.

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