

Menstrual psychosis in an adolescent girl

Psychotic episodes that synchronise with the menstrual cycle have been described in case reports. Here, the authors report the case of an adolescent girl presenting with psychosis coinciding with menstruation and discuss the aetiology of this cyclical association.

Recurrent psychotic episodes synchronising with the menstrual cycle have been described for many years in case reports.^{1,2} They have stimulated a debate about whether the association is causal or coincidental.³ The possible endocrine cause has widened the range of potential treatments to include hormones and agents suppressing the menstrual process.² In modern adolescents, illicit drug use is another factor that can complicate the presentation.

Here, we present the case of a 14-year-old girl presenting with episodes of psychosis coinciding with her menstrual cycle.

Presentation

A 14-year-old girl was referred to us in August 2004 by her GP following an episode of bizarre behaviour while on a two-week holiday in Greece with her family.

The night before and for the first few days of the holiday, the patient had felt very excited, and sometimes frightened, and could not sleep. She thought that people were talking about her because she had done something wrong, such as smoking cannabis. She insisted on looking at the English-language newspapers for mention of her name. She thought that the police might be plotting against her. She heard voices calling her swear words.

Her family said that she appeared confused and distressed, and her movements and speech were slow. Her personal hygiene was poor. These symptoms resolved towards the end of the two-week holiday and she was fine for a further two weeks.

A few days before returning to school, in September 2004, she suffered a relapse, believing that people on television were giving her 'evil looks' and repeating things that she said. She thought that radio programmes were saying 'you're at home, bunking off'. She believed that her family had been swapped with other people. She felt low in mood and wanted to die, with thoughts of cutting her wrists. She also lost her appetite and found it difficult to concentrate.

During the mental health assessment, she described paranoid delusions as described above, thought broadcast, as well as occasional auditory hallucinations. She was low in mood, with suicidal ideation and disturbed sleep, appetite and concentration.

Initial treatment

The patient was diagnosed as suffering from a psychotic episode, the aetiology of which was not clear. Initial management involved treatment with risperidone 0.5mg twice daily and regular sessions with a nurse therapist. Blood tests,

an EEG and an MRI scan were carried out and were normal. The patient symptoms resolved within a few days, and her mood improved.

Course of illness

One month later, in early October 2004, the patient experienced a third episode of psychosis with depressive symptoms. It became apparent that each episode had started three days before her menstrual period and resolved within seven to 10 days. After each episode she felt well, with increased appetite and energy and optimistic thoughts.

Her risperidone was increased to 1mg twice daily and she experienced no relapses until the dose was gradually reduced by February 2005 to 0.5mg daily. Within two days, she experienced further paranoid symptoms and felt sad with suicidal thoughts. Risperidone was increased again to 1mg daily to good effect.

Further treatment

The treatment options considered at this point included endocrine treatments, antipsychotics or mood stabilisers.

In view of the potential side-effects of antipsychotic medication and mood stabilisers, the patient opted to try the progesterone-only pill. This was initially combined with antipsychotic medication with a view to reducing the latter.

continued on page 20

Zoe Ellison-Wright
MRCPsych,
Veronica O'Keane
MB, PhD,
MRCPsych, FRCPI

Case notes

Menstrual psychosis

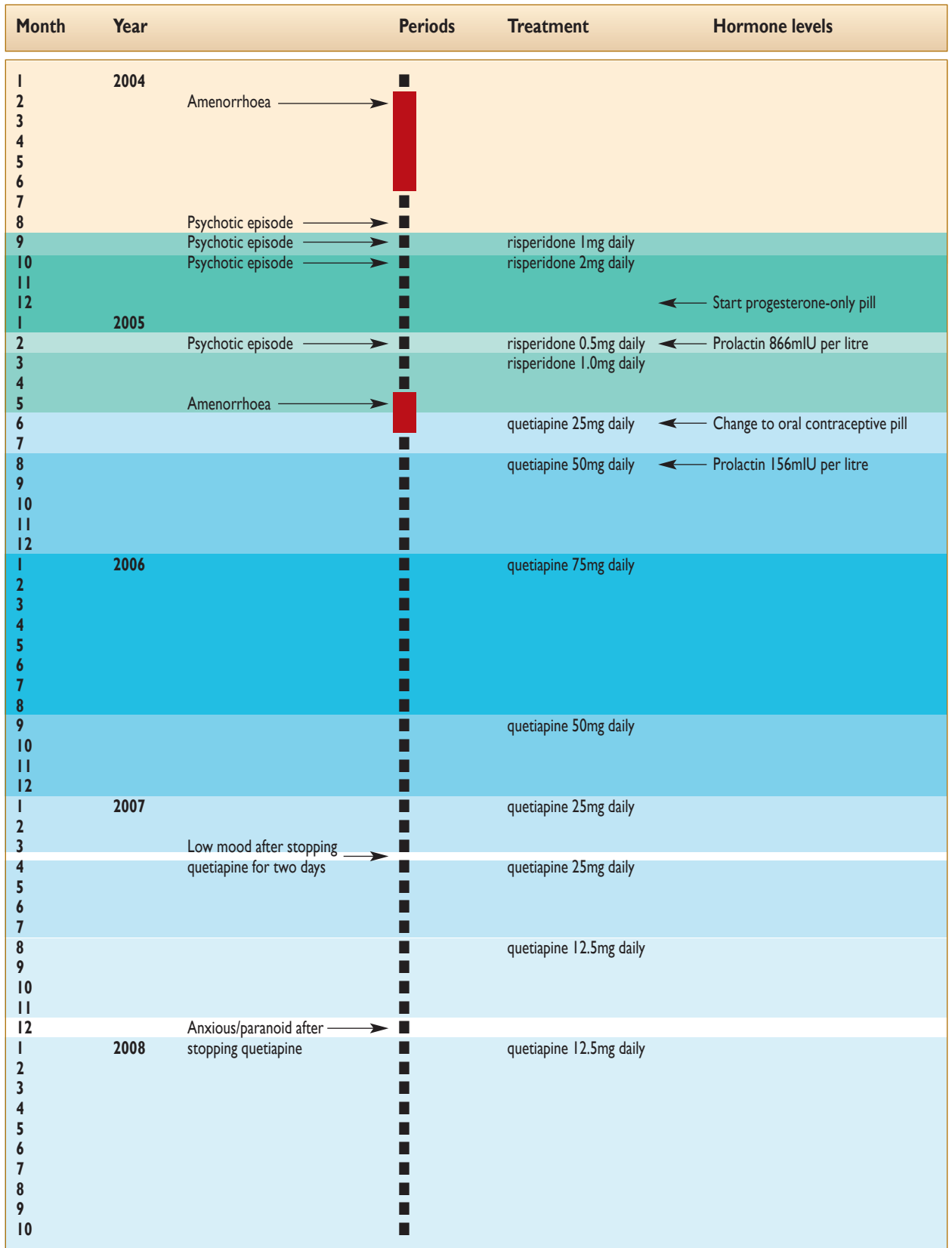


Figure 1. Timeline showing patient's symptoms in relation to menstrual cycle, medication and prolactin levels

Case notes

Menstrual psychosis

In June 2005, the patient had amenorrhoea and raised prolactin levels. Her medication was therefore changed to quetiapine, gradually increasing to 75mg daily. She also changed from the progesterone-only pill to the combined oral contraceptive pill.

Over the following months, the patient continued to experience irritability and anxiety premenstrually, but with no psychotic symptoms. She tended to seek a lot of reassurance from her family just before each menstrual period, and became low, tearful, and oversensitive for a few days after her periods started.

She and her family received support from the Early Intervention in Psychosis Service. Her quetiapine was gradually reduced to 12.5mg daily in August 2007. A trial off quetiapine was planned for December 2007, but when her period started she became anxious and paranoid, and so she continued with quetiapine 12.5mg daily, with the option of increasing to 25mg premenstrually if necessary, at least until after she had finished her A-level exams.

Background history

Pre-morbidly, the patient had been outgoing, with lots of friends. She had attained normal developmental milestones and was physically well. She was attending mainstream school.

Her parents had separated in 2000. She had been seen by the Child and Adolescent Mental Health Service the year prior to her first presentation due to behaviour problems. She admitted smoking cannabis once a month in the year prior to first presentation, the last time being two days before she went on holiday. She had not used any other drugs.

Menarche had been at the age of 13 years, and she had had regu-

lar menstrual periods for a year. In early 2004 she had amenorrhoea for four months, and recommenced menstruation in June 2004, two months' prior to the start of her psychotic episodes.

Family history

The patient's mother had become depressed at the age of 12 years, coinciding with her menarche. She had suffered from postnatal depression following the birth of her eldest daughter and became depressed again following the birth of the patient. She responded well to progesterone therapy. When she discontinued progesterone, she became depressed again and commenced an SSRI with good effect. The patient's father and maternal grandmother had also suffered from depression.

Discussion

A 'periodic psychosis of puberty' has been described in case reports for over 40 years.⁴ The cause has been attributed by some authors to endocrine effects of the menstrual cycle and the term premenstrual psychosis has been applied.² In these descriptions, psychosis typically commences premenstrually and resolves within a few days to a week.² The longitudinal course of the disorder is that it commences at menarche and resolves over some months, possibly recurring during the menopause. It has been hypothesised that these brief psychoses are associated with anovulatory cycles⁵ thus explaining their occurrence at the extremes of the reproductive span when anovulatory cycles are more likely.

That an endocrine aetiology is likely is indicated not only by the cyclical association with menstruation but also by the reported co-occurrence of post-partum psychosis and premenstrual psychosis in the same individuals.⁵

Premenstrual psychosis preceding a later onset of postpartum psychosis and a premenstrual relapse of postpartum psychosis⁶ have been described. Both are rare disorders, making a co-occurrence unlikely, and both psychoses have similar clinical features. A careful history of our patient's mother's puerperal symptoms revealed that she might have experienced an episode of mild postpartum psychosis because of her experiences of extreme depersonalisation.

The phenomenology of our patient's psychosis was similar to that of postpartum psychosis, in that the patient had a significant number of first-rank symptoms including third-person commentary on her actions, *echo de la pensée* and somatic hallucinations. She experienced amorphous and shifting delusional beliefs usually related to persecutory ideas, which were not fixed. She also experienced Capgras syndrome or delusional misidentification, which is very common in postpartum psychosis.

A unitary endocrine hypothesis has been postulated for premenstrual and postpartum psychosis whereby precipitous reductions in brain oestrogen concentrations precipitate episodes of psychosis in predisposed individuals.⁵ However, symptoms occurring with a monthly cycle may have causes other than menstruation or a periodicity that over time gradually diverges from that of the menstrual cycle.³ A case series of adolescents with brief recurrent psychotic episodes (including two boys) found that the periodicity was linked to the menstrual cycle in only two of nine girls.⁷ The authors suggested that most cases were manifestations of an affective illness.

There are also reports of the condition resolving spontaneously. This has led to the suggestion that

sometimes it may be a benign entity and a manifestation of premenstrual syndrome.⁸

In the case described here, in addition to the family history, other contributory factors may have been cannabis intake and the stress of moving home and having irregular contact with her father.

Treatment options

When periodic psychosis of puberty was linked to the menstrual cycle, some authors advocated endocrine treatments² such as the oral contraceptive pill,⁹ progesterone-only pill¹⁰ or more recently goserelin, a luteinising hormone-releasing hormone (LHRH) analogue.¹¹ There is circumstantial evidence that female patients with schizophrenia may have a deficit in oestrogenic function and their symptoms may wax and wane with their cyclical levels of oestrogen.¹² However, evidence that these episodes may be manifestations of bipolar disorder has led to recommendations that optimum treatment should be antipsychotics or mood stabilisers.⁷ Other authors have recommended combined endocrine and bipolar treatments, often on a pragmatic or trial and error basis.¹

In our patient, low-dose antipsychotic treatment plus the oral contraceptive pill controlled symptoms with minimal side-effects. However, the contribution of the oral contraceptive pill remains uncertain while she continues to take an antipsychotic.

Theoretically, the oral contraceptive pill may supplement oestrogen levels, either preventing the fluctuation in psychotic symptoms associated with the menstrual cycle or raising oestrogen levels overall and having an adjunctive antipsychotic action. The second possibility may be less likely because trials of oestrogen as an

antipsychotic agent have not demonstrated a consistent effect.¹² Furthermore, hyperprolactinaemia caused by antipsychotic drugs may negatively feedback on oestrogen levels, diminishing the supposed antipsychotic effects of oestrogen. In our patient, treatment with a low dose of risperidone followed by a switch to quetiapine (which has a lower propensity for causing hyperprolactinaemia) may have avoided this negative feedback effect.

In the longer term, the patient may require a mood stabiliser if she suffers further affective episodes.

Dr Ellison-Wright is a Consultant Child and Adolescent Psychiatrist at Dorset County Hospital and Dr O'Keane is a Consultant Psychiatrist at St James Hospital, Dublin

Conflicts of interest

None.

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