CASE REPORT

Gilles de la Tourette syndrome in pregnancy: a retrospective series

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Summary: Tourette syndrome is a neuropsychiatric syndrome characterized by motor and vocal tics with further co-morbidities, e.g. obsessive–compulsive disorder and attention deficit hyperactivity disorder. There is only a single prior case report in pregnancy in addition to a postal questionnaire study including 10 pregnancies. In a series of 11 pregnancies in patients assessed by the authors, there were no adverse effects on the pregnancy, although some obstetricians were unduly concerned. There was no consistent effect on the severity of the tics, although in some women there seemed to be a significant improvement during pregnancy.

Keywords: Tourette, pregnancy, tics

Tourette syndrome (TS) is defined by multiple motor and one or more vocal tics, lasting longer than a year, usually with onset in childhood. Apart from the involuntary twitch-like movements and noises, patients may have echolalia (copying what other people say), coprolalia (inappropriate and involuntary use of swear words) and self-injurious behaviours. Also, the majority of individuals seeking medical attention have additional co-morbid disorders, including attention deficit hyperactivity disorder, obsessive–compulsive behaviours/disorder and depression. The prevalence of TS is now recognized to be around 1% in school children, but the range of severity is very wide.[1]

Tics are characteristically situational and fluctuate in severity over time. The prognosis is better than previously thought with many individuals improving substantially by the age of 18 years so that the media stereotype of an adult with very severe TS applies to a small proportion of patients. The tics are often treated with neuroleptics or clonidine and co-morbidities generally need to be treated in their own right.

There are well-known examples of an effect of the pregnant state on neurological disorders: for instance improvement of pre-existing migraine,[2] or reduced relapse frequency in women with multiple sclerosis (with an increase in relapses after delivery),[3] and issues relating to anticonvulsant metabolism and teratogenesis in pregnancy.[4] There is no clinical link between TS and these examples, but its behaviour during pregnancy may be of interest as sex hormones have been implicated in the expression of TS, albeit only speculatively.[5] The prevalence of TS is 2–4 times greater in boys than in girls.[6] There has been a case report of the successful use of pimozide in a pregnant woman with TS with a normal pregnancy outcome.[7] A postal questionnaire survey of 1000 TS Association (in the USA) members yielded 349 respondents, of whom 74 were women with medically diagnosed TS. Of those, 47 were of reproductive age and 26% experienced a premenstrual increase in tics, which in some cases was predicted by an increase in tics at menarche, a time when for most patients TS symptoms often decline. Menopause was not associated with a change in tics. Ten women recorded having had a pregnancy, with nine saying that there was no effect on their tics.[6]

We investigated our own cohort of patients seen personally in a tertiary referral neuropsychiatry setting.

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PATIENTS

From a cohort of several hundred TS patients (the majority were children and male), eight women who had had a total of 11 pregnancies for which information about the pregnancy was available were identified. Our impression is that the pregnancy rate in women with TS is lower than average, probably due to a number of voluntary factors. Also it is likely that the cohort experienced further pregnancies that we have not captured. Six of these women (accounting for 9 pregnancies) completed a questionnaire highlighting issues relating to their TS and pregnancy. Data from the two remaining women who were lost to follow-up were obtained from their clinical notes and are used in completely anonymized form here. In five cases information about any changes in severity of TS was obtained entirely retrospectively. In six pregnancies prospective assessment by experienced neuropsychiatrists or neurologists was available in the clinical record. Changes in symptoms were rated on clinical grounds.

RESULTS

Out of 11 pregnancies, a substantial improvement in TS symptoms was noted in five, a deterioration was seen in three, and a

neutral effect was experienced in three (Table 1). Three of the women had had two pregnancies and in each of these women the effect was the same for both pregnancies (one improved, one deteriorated and one saw no change each time). In one woman the tics disappeared in pregnancy and did not recur. Three women reported that their obstetricians were unduly worried about the presence of TS. One of the two women that felt their TS deteriorated reported coping very badly with the tics during pregnancy and also suffered postnatal depression. Ten babies were born vaginally and one was born by caesarean section with spinal anaesthesia.

Out of the 11 pregnancies, six conceptions occurred on treatment with sulpiride, aripiprazole, or in two cases, fluoxetine in addition to haloperidol. One woman withdrew drugs prior to conception in both her pregnancies and experienced a deterioration in tics. Two women withdrew their drugs after pregnancy was diagnosed, in one there was a neutral effect on tics, and in the other there was an improvement from the pre-treatment baseline (with aripiprazole that itself had been highly effective). The two pregnancies completed on haloperidol and fluoxetine and one on sulpiride resulted in healthy babies.

DISCUSSION

No consistent trend in tic severity during pregnancy was seen. In TS there is variability in treatment response from patient to patient and the same may apply to the effect of pregnancy. Due to the number of patients, this can only be considered preliminary data, further weakened by the variability in use and cessation of medication. Another weakness is the use of a retrospective subjective impression of what happened during five of the pregnancies, which may be prone to recall biases related to the overall experience of pregnancy and the aftermath.

Table 1 **Patient characteristics**

Patient	Drug treatment at the time of pregnancy	Effect of pregnancy on tics	Notes
1	Sulpiride withdrawn prior to conceptions	Worse (2 pregnancies)	Baseline severity mild
2	Haloperidol, fluoxetine	Neutral (2 pregnancies)	
3	Sulpiride stopped after conception	Neutral	Coped badly with tics in pregnancy, alcohol problems
4	Sulpiride	Improved	Baseline severity mild
5	None	Worse	Coped badly with tics and suffered postnatal depression
6	First pregnancy multiple drugs, second pregnancy aripiprazole withdrawn after conception	Improved (2 pregnancies)	Improvement very significant
7	None	Improved	Tics remitted and did not recur
8	None	Improved	

However, within this mixed picture the improvement during five pregnancies was striking and one patient likened it to the effect of medication. Among these few patients we do feel that in some there was probably a significant biological effect, and it seems likely that the impression of the previously cited postal study, that pregnancy does not impact tic severity,[6] should be amended given the opportunity to investigate the question in women under specialist follow-up and with some prospective data.

There are also some data regarding the effect of pregnancy on pre-existing pure obsessive-compulsive disorder (without TS), but it has been suggested that pregnancy generally has a neutral effect on severity, with an increased risk of postnatal depression.[8]

TS did not have an adverse effect on any of these pregnancies, but did cause alarm among some of the attending obstetricians. Only in a case of great severity would violent tics be likely to present a physical risk for anaesthetic or delivery procedures. In practice this is unknown to the authors, although a case in this situation of general anaesthesia for caesarean delivery rather than regional techniques being used is reported.[9] Our patients were selected from a tertiary referral cohort and so would be expected to have greater than average severity. In fact two had only mild tics reflecting the great range seen. The mainstay of treatment for this condition, neuroleptics, are generally considered safe in pregnancy but there are limited data, especially for newer drugs. Balancing risk and benefit in TS is hard to quantify in a pregnant woman with severe symptoms who has been well controlled by drug treatment. Other issues to consider are an increased risk of postnatal depression in individuals previously suffering a depression, which is relatively prevalent in TS, and the risk of TS developing in the child of a woman with TS. The condition is polygenic with an autosomal dominant pattern with reduced penetrance, and to date no major genes have been identified. The risk of each child expressing the disorder is around 25%. Of additional obstetric significance, there is a suggestion that perinatal difficulties could increase the risk in genetically vulnerable children.[10]

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