Successful pregnancy and delivery in a patient with Parkinson’s disease under pramipexole treatment

Grossesse et accouchement sans complication sous pramipexole chez une patiente porteuse d’une maladie de Parkinson

The clinical experience on the management of pregnancy in idiopathic Parkinson’s disease (PD) is limited with case reports because of the rarity of this condition. Accordingly, antiparkinsonian drug treatment during pregnancy, potential teratogenicity of drugs and the effect of pregnancy on the course of the disease wait to be better answered [1]. Most of the reported cases consisted of retrospective questionnaires or analysis of patients with PD who had been pregnant [2–6], but very few anecdotal data reported prospective, quantitative neurologic examinations of pregnant PD patients [1,7]. Here, we report a patient with PD treated with pramipexole during her pregnancy and prospectively evaluated in detail at prepartum, intrapartum, and postpartum periods.

Case report
A 35-year-old woman admitted to our neurology department due to freezing gait and dystonia on her left leg characterized by foot inversion during walking. Her symptoms started two years ago with slow progression, and left arm dystonia was later developed. She was diagnosed as dystonia, and given levodopa treatment. Although her symptoms improved significantly, she developed dyskinesias few months after treatment, and levodopa was stopped. Her neurological examination on admission revealed mild hypomimia, mild bradykinesia on left side, asymmetrically bilateral synkinesis rigidity (predominant on the left arm), decreased associated arm movements (prominently on left), freezing and dystonic posture of her left leg on the basis of these findings, the diagnosis of PD was made. The total score of Unified Parkinson’s Disease Rating Scale (UPDRS, Part I–III) was 12 points. The patient was challenged with a single dose of 200 mg levodopa plus 50 mg benserazide, and substantial improvement in bradykinesia and rigidity was observed. On the other hand, levodopa induced severe dyskinesias weeks after treatment. She was then put on treatment with pramipexole (1.5 mg, tid) and rasagiline (1 mg/day) with substantial improvement without any side effects. Her family history was unremarkable. There was no consanguinity. The detailed biochemical investigations excluded any metabolic or infectious disorders. The cranial magnetic resonance was normal. The genetic analysis could not be performed due to patient’s refusal. During her follow-up, she got married and planned for pregnancy. The family was very anxious about the unknown teratogenic effect of the drugs. At this time, rasagiline was stopped without a marked worsening in her symptoms and pramipexole was suggested to be continued. On the other hand, as she became pregnant, she has stopped taking her medication. However, she developed severe dystonic contractions on her axial muscles, bradikinesia and gait disturbance. Her drug-free neurological examination at first month of pregnancy showed prominent worsening including freezing on her right leg, axial dystonia, and mild retrocollis to the right side. The UPDRS I–III scores were 21 points. She was put on pramipexole treatment (2 mg, tid). The mother and the fetus were closely followed-up; all ultrasonographic evaluations and blood tests for fetal abnormalities were resulted normal. The mother, at the age 37 years, gave birth to a 2.8 kg healthy boy at 35th week by caesarean section. General and neurological examinations of the baby, as well as neonatal blood tests were normal. The patient did not breastfeed the baby. Her latest examination under pramipexole (3 mg, tid) and biperiden (3 mg, tid) treatment showed prominent improvement with total UPDRS score of 3 points.

Discussion
Here we described a young woman with PD who had a planned pregnancy and gave birth to a healthy boy under treatment with pramipexole. Although most of the gestational period was spent under treatment, the unauthorized cessation of pramipexole during 1st trimester of pregnancy (period with the most teratogenic liability) is an important aspect in our patient. In the literature, there is only one case report of pramipexole treatment during pregnancy in a PD patient, which also resulted an uncomplicated birth of a healthy baby [8]. Few cases reporting exposure to bromocriptine [1,9], pergolide [10], and cabergoline [11] did not show specific teratogenic effects. Bromocriptine [12], pergolide [13], and cabergoline [14] were not associated with significant teratogenicity in animal studies. Breast feeding, however, is contraindicated with dopamine agonists due to prolactin inhibitory effect of dopamine.
Medical experience with levodopa in pregnant PD patients showed no major complications during pregnancy or teratogenicity, except for one case of spontaneous abortion of unknown etiology [1,7,15-17]. Based on animal studies, it was recommended that the use of levodopa should be avoided during pregnancy until further clinical experience is gained [18]. Animal studies of MAO inhibitors demonstrated mild to serious deleterious effects on neurobehavioral and functional fetal outcomes [19,20]. Amantadine exposure during the first trimester was demonstrated to cause cardiovascular maldevelopment [18,21].

Another problematic condition in these patients is the worsening effect of pregnancy on PD course. Although some authors reported unchanged symptoms [1,9,22], most reports described significant worsening of motor disability [1,7,8]. Also, non-motor symptoms seemed to worsen during pregnancy [23]. Cessation of antiparkinsonian treatment further increased the disabilities [9]. Our patient had worsening of her symptoms upon cessation of her medications, but a substantial benefit could be attributed to disease progression [1]; however, rapid progression rate and postpartum improvement support deleterious influence of pregnancy [2,4,17,24]. The loss of dopaminergic effects of estrogens and pharmacokinetic variations of drug levels are suggested mechanisms [3,10,25,26]. More data concerning the safety of antiparkinsonian drugs in PD treatment, as well as the effect of pregnancy on parkinsonian symptoms are needed. In patients planning pregnancy or became pregnant incidentally under treatment with dopamine agonists, the guidance and recommendations by the physicians play an important role.

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References


Gulcin Benbir, Sibel Ertan, Sibel Ozekmekci
Istanbul University, Cerrahpasa Faculty of Medicine, Department of Neurology, Istanbul, Turkey

Correspondence: Gulcin Benbir, Istanbul University, Cerrahpasa Faculty of Medicine, Department of Neurology, Sleep and Disorders Unit, Fatih, 34098 Istanbul, Turkey. drgulcinbenbir@yahoo.com

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