Introduction
It is a fact that pregnancy in Parkinson’s disease is a rare occurrence. Nevertheless, as more women are waiting longer to have children, the chances of this happening are increasing.

There are no figures available for the number of women with Parkinson’s who are of child-bearing age. Estimations can really only be made on an approximate calculation. If there are 120,000 people with Parkinson’s in the UK, 1 in 20 is diagnosed under age 40 and 50% of these are women, then there are approximately 3,000 women of child-bearing age with Parkinson’s in the UK at the time of their diagnosis.

In light of the rarity of reported cases of pregnancy in Parkinson’s, this number seems quite high and many other factors should be taken into account. The women may not wish to have any (or more) children, or may be reluctant to have children having been diagnosed with Parkinson’s.

The very small number of cases reported in medical journals means that there are problems with predicting what happens to women with Parkinson’s when they become pregnant. Most GPs, neurologists, obstetricians and Parkinson’s Nurse Specialists have little or no experience of dealing with women with Parkinson’s who become pregnant. Nevertheless, the majority of those cases written about ended in successful, full-term delivery of healthy babies.

What we do know is that, during pregnancy, a woman’s body changes to enable her to carry and deliver a baby. Some of these changes are visible, while others occur within the body’s circulation and hormonal systems. There are a variety of ways that these changes can be impacted on by Parkinson’s disease. In addition, there is the complex issue of whether it is ‘safe’ to take Parkinson’s medication while pregnant.

The effect of pregnancy on Parkinson’s symptoms
The effect of pregnancy on the individual’s Parkinson’s symptoms is something that cannot be predicted.

The available evidence from recorded cases is unfortunately not particularly helpful, in as much as it simply states that some women’s symptoms worsen and some do not. The impact of the stress of pregnancy may have a role in this, or the hormonal changes, which can affect the brain’s sensitivity to dopamine, could also be a factor. What we can say is that there can be no assurances as to how pregnancy will affect each individual’s symptoms, but it is not a certainty that they will worsen.

Changes in your body during pregnancy
During pregnancy, a woman’s body will undergo physical changes. Many of these changes can occur with Parkinson’s and, therefore, may be more profound. This can lead to a number of problems with both motor and non-motor symptoms. These changes can include:

- change in body shape/weight gain
- change in centre of gravity
- slowing down
- needing to urinate more often
- morning sickness
- constipation
- increased saliva
- tiredness
- disturbed sleep
Changes to body shape and a shift in centre of gravity mean that the pregnant woman's sense of balance can become affected. This may be compounded by her Parkinson's, increasing the risk of falls. Slowness of movement, coupled with a need to pass urine more often, are also common problems associated with Parkinson's in the absence of pregnancy.

Morning sickness (not always confined to ‘mornings’) can cause a number of problems, not least the risk of patients vomiting their Parkinson’s medication and losing the effectiveness of those tablets. Dehydration, malaise, increased salivation due to nausea and generally feeling unwell can also occur.

Importantly, commonly prescribed anti-sickness medication, such as Metocloperamide (Maxalon) and Prochlorperazine (Stemetil) should not be given to people with Parkinson’s as they can make the Parkinson’s symptoms worse.

Constipation is another common Parkinson’s-related issue that can happen in pregnancy, increasing the risk of urinary problems and haemorrhoids before or during childbirth.

Pregnancy is often very tiring, as poor sleep due to discomfort, increased effort of performing tasks due to weight gain, coupled with Parkinson’s may cause higher than usual levels of fatigue.

**Helpful advice on coping with pregnancy in Parkinson’s**

**Balance problems** – consult your health visitor for advice on posture and, if necessary, a physiotherapist for advice regarding balance and the use of a walking aid if required.

**Slowness of movements** – allow more time to perform daily tasks. Remember, you will probably feel more fatigued than usual, so this will have a dual benefit.

**Nausea and vomiting** – consult your GP or hospital team for advice. It is advisable to point out to them (as they may not be aware) that Maxalon and Stemetil should NOT be given to anybody with Parkinson’s. In addition, small, frequent meals 6-8 times daily are advised, as well as avoiding high fat and very spicy foods. Starchy foods, such as bread (toast) or dry breakfast cereals can help with nausea.

**Constipation** – remember to drink plenty of fluids and have a diet rich in fibre to reduce the risk of becoming constipated. Remember, caffeine in drinks such as tea, coffee and coke can make you want to pass water more often and should be avoided.

**Fatigue** – Try to get eight hours sleep every night, and rest during the day when possible.

**Medication for Parkinson’s disease and pregnancy**

There is little doubt that the main problem with advising patients with Parkinson’s who either are pregnant or wish to have children is that the only available advice given to doctors is that all medication for Parkinson’s should not be given in pregnancy. This may be due to the lack of safety in pregnancy testing of these drugs in humans, rather than because of any proven evidence that they are unsafe. Nevertheless, the current situation remains that there is insufficient scientific evidence to show that these drugs can be safely used in pregnancy and some safety testing using animals has pointed to potential problems.
This is very important from a legal perspective, and this information must be made very clear.

However, there have been a number of cases reported in medical journals (approximately 35 pregnancies) where women who have Parkinson’s have given birth to healthy babies while remaining on their medication regimens. There are only two cases reported (out of 23 pregnancies) where patients taking levodopa had problems, and these cannot be proven as being caused by the levodopa therapy. Animal testing suggests that selegiline should not be taken, although there is one recorded case of a woman who gave birth to a healthy infant after taking selegiline for the duration of her pregnancy.

There is, however, strong evidence that amantadine should NOT be taken by any women who is pregnant, as there have been a higher proportional number of problems with patients taking this drug in particular.

The reality is that the amount of evidence so far is inconclusive, and that any woman with Parkinson’s who becomes or wishes to become pregnant should discuss the risks with her neurologist, obstetrician and specialist Parkinson’s nurse.

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