

## Family planning and pregnancy in Multiple Sclerosis: have we changed pregnancy outcomes with proactive use of Disease Modifying Treatments?

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### Background:

Multiple Sclerosis (MS) incidence is 2 to 3 times higher in women than men with its onset common in women aged 20 to 40 years. Although MS disease activity is typically low during pregnancy, it has been reported that there is an increased risk of both clinical (relapses) and radiological activity (new inflammatory lesions) following delivery. Disease control with effective MS disease modifying therapy (DMT) in post-partum women with MS is therefore critical.

Delaying treatment until women with MS have completed their families can lead to the development of irreversible disability. It is therefore important to discuss family planning and pregnancy proactively.

Historically, there has been an unmet need for this patient cohort with no standardised pathway. Any input has often been ad hoc, requested by patients, their consultants or their GPs. With the increasing number of disease modifying therapies now available, together with the variance in MS, lifestyle and personal preferences, a dedicated service and pathway for MS patients considering pregnancy and/or are pregnant would standardise clinical activity, improve outcomes and patient satisfaction.

The new guidelines for pregnancy care in MS by Ruth Dobson et al, published in 2019 and more recently the ABN guidelines in 2022 recognise the importance of family planning throughout the different stages of pregnancy (fertility, pre pregnancy, pregnancy and post-partum).

### Aims:

We have made huge advances in managing this cohort of patients and have clear consensus guidelines published by Ruth Dobson et al to help inform and guide practice. My aim is for every patient with MS under the care of a Consultant at The National Hospital for Neurology and Neurosurgery to be offered a review in a bespoke pregnancy MS clinic to proactively discuss family planning.

The clinic would offer advice and support on family planning issues in MS to include:

- DMT choice and making clinical decisions; when to start, discontinuation and consider rebound effects
- Maternal wellness
- Lifestyle
- Practical and emotional considerations
- Mode of delivery
- Breastfeeding
- Symptom management

### Methods:

I completed a patient audit to understand a typical pregnancy experience prior to the development of a new service.

- 71% felt their maternity team were not adequately informed of MS and its effects on pregnancy
- 93% would welcome access to a specialised service that considers pre conception counselling, pregnancy and post-partum advice and support.

This information helped to set up a bespoke pregnancy in MS service that has four key components:

1. Weekly nurse-led clinic for new and follow-up patients (established in 2019). This has expanded to 14 slots a week (mixture of face-to-face and virtual)
2. Monthly joint Obstetric/Neurology clinic based at EGA (all neurological conditions) since July 2020 - 12 slots a month (20-30% MS patients)
3. Monthly MDT (Neurologist and Nurse) established May 2021 - 4 slots a month
4. Email service to contact with any clinical queries or concerns

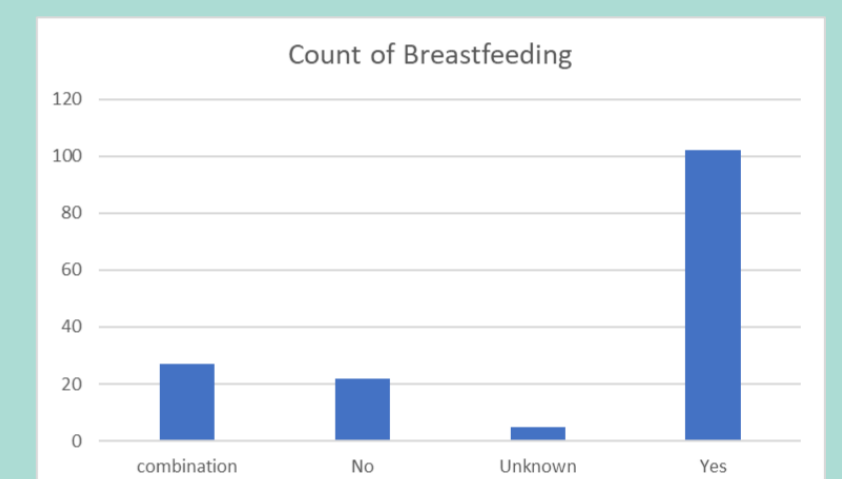
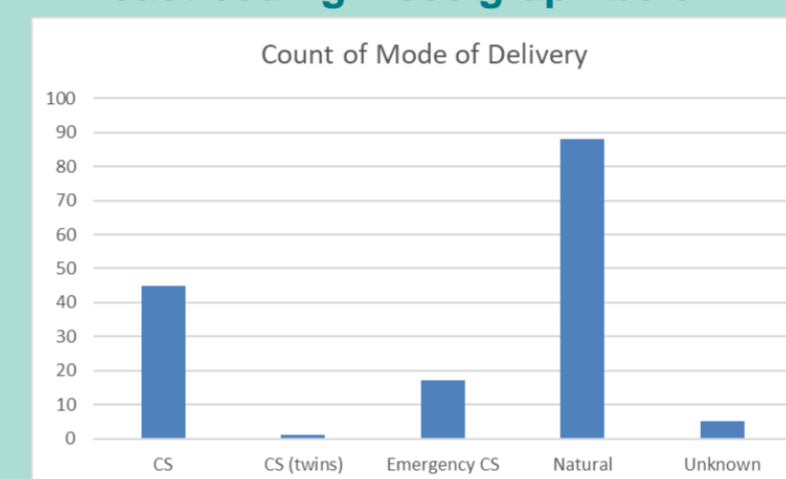
This cohort of patients are case-managed and initially seen in clinic for pre pregnancy counselling. Patients are then seen each trimester and post-partum to coordinate DMT pathway (start/resume/escalate). When considering the treatment of women with MS who are planning pregnancy, several important factors need to be considered. These include: disease activity, impact of therapy withdrawal, effects of MS therapy on the foetus, plan for breastfeeding.

This partnership with the obstetric team will also help meet the objectives set out by the Royal College of Midwives' Better Births Initiative. This initiative aims to improve continuity of care during the ante- and post-natal periods.

### Results:

156 pregnancy outcomes between 2019 and 2022. The data includes:

- Age of patients – mean age 35 years
- Obstetric care – 43 different NHS Trusts
- Patients on DMTs prior to pregnancy – 79%
- Patients on DMTs during pregnancy – 50%
- Patient reported relapse within 12 months postpartum – 24%
- Patients on DMTs during pregnancy Vs no DMTs during pregnancy showed a reduction of 10% in patient reported post-partum relapse
- Radiological activity within 12 months postpartum – 34%
- Patients on DMTs during pregnancy Vs no DMTs showed a 17% reduction in radiological activity post-partum (within 12 months)
- Mode of delivery – see graph below
- Breastfeeding – see graph below



### Discussion:

The patient cohort ranged between age 21 and 45 with an average age of 35 years. This is the age that data suggests fertility starts to decline more rapidly. Does this therefore suggest that MS patients delay starting or completing their families due to treatment decisions?

Patients were receiving obstetric care at 43 different NHS Trusts. The largest cohort of 21% was seen at UCLH, compared to 50% seen at UCLH prior to the pandemic. This highlights the need to maximise communication between different NHS Trusts.

Many people with MS report concerns regarding the period immediately following childbirth. It is a physically and mentally difficult time for all new parents but for those with MS it presents an additional challenge. Hughes et al suggests risk of relapse in the postpartum period is influenced by those with a higher relapse rate in the 2 years prior to pregnancy, higher EDSS, relapse during pregnancy and use of DMTs prior to conception. In my patient cohort even with the proactive approach to treatment, 29% chose to discontinue treatment during pregnancy. Some either re-starting in the third trimester, post-partum or once completed breastfeeding.

Prior to the 2019 consensus guideline, there were no recommendations for treatment during pregnancy. With any recommendations there can be delays in clinical practice and a reluctance from the patient cohort as they are making treatment decisions both for themselves and the health of the baby. Collecting real-world data of pregnancy outcomes will help inform patients and help prevent delays in initiating treatment that can leave patients vulnerable in the post-partum period.

Preliminary findings show large reductions in patient reported relapses and the findings of new lesions within the post-partum period when treated proactively. 12 fewer patients reported a relapse when they continued treatment throughout pregnancy and 20 fewer patients developed new MRI activity.

However, patients that reported a relapse post-partum were often not assessed so it is difficult to differentiate between decompensation from existing MS features, in the context of stress from labour or major surgery (c-section), hormonal changes post-partum or increased tiredness associated with having a new-born. When patients experienced decompensation the duration it lasted was unpredictable but in keeping with the duration of recovery post-partum.

A consideration when looking at those with active scans postpartum is the time interval between scans. It is therefore difficult to say whether or not the radiological activity occurred prior to or after pregnancy. However, this patient cohort was either on no treatment, low efficacy treatment or experienced gaps between treatments at some point during the family planning journey.

### Conclusion:

A bespoke family planning/pregnancy in MS service is now embedded within the core clinical service and is busier than ever. I plan to complete another patient experience survey to compare against the original undertaken in 2019.

This sample of data is just the start of a larger project to review clinical outcomes in the post-partum period. The provisional findings suggest that the proactive use of DMTs in women for conception, pregnancy and breastfeeding does reduce both clinical (relapses) and radiological activity (new inflammatory lesions) following delivery.

It will be interesting to gain real world data in line with the latest guideline on the use of anti CD20 therapies in pregnancy and breast feeding.

Capturing data from patient outcomes within our own service combined with the data from pregnancy registries will continue to shape the management of MS through family planning. Having access to more patient/foetal outcomes may help provide patients with the necessary information to make informed treatment decisions and ultimately improve patient outcomes.

### References

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