Optimising IV DMT Access for Multiple Sclerosis Patients

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Introduction

The Brooke Treatment Unit (BTU) is an outpatient department which provides disease modifying treatment (DMT) treatment for multiple sclerosis (MS) patients as well as other treatments for neurological conditions. The unit consists of 10 infusion chairs and is staffed by nursing and medical teams including three chairs designated for Ocrevus administration staffed by IQVIA.
Currently, there is no evidence-based timeframe for initiating DMTs in MS patients, resulting in difficulties to assess performance. Nevertheless, it is recognised that early diagnosis and treatment are correlated with improved patient outcomes, including reduced relapse rates and slowed disease progression (Tobin, 2021).
At present, there is an increased demand for initiating Ocrevus treatment, although resources in terms of slots availability and staffing remain limited.

Objective

This service evaluation aims to identify areas for improvement in the management of patients accessing IV DMTs on BTU by:

- assessing Ocrevus demand and service provision, timeframe for Ocrevus initiation and administration practice compared to slot allocation/SmPC.
- assessing potential time and cost savings associated with transitioning from intravenous to subcutaneous Tysabri.

Methods

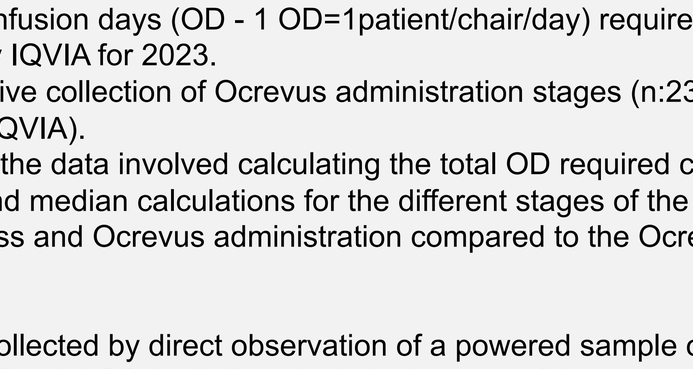
Ocrevus:
Data was collected from the Electronic Patient Record (EPR), MS dashboard, and Patient Administration System (PAS) and included:
- patient started on Ocrevus by year.
- number of new Ocrevus in 2023 including timelines of the stages from MS MDT to DMT, prior DMTs and documented delays.
- Ocrevus infusion days (OD - 1 OD=1patient/chair/day) required and provided by IQVIA for 2023.
- retrospective collection of Ocrevus administration stages (n:23, 7 by BTU and 16 by IQVIA).

Analysis of the data involved calculating the total OD required compared to provided and median calculations for the different stages of the MDT to DMT process and Ocrevus administration compared to the Ocrevus SmPC.

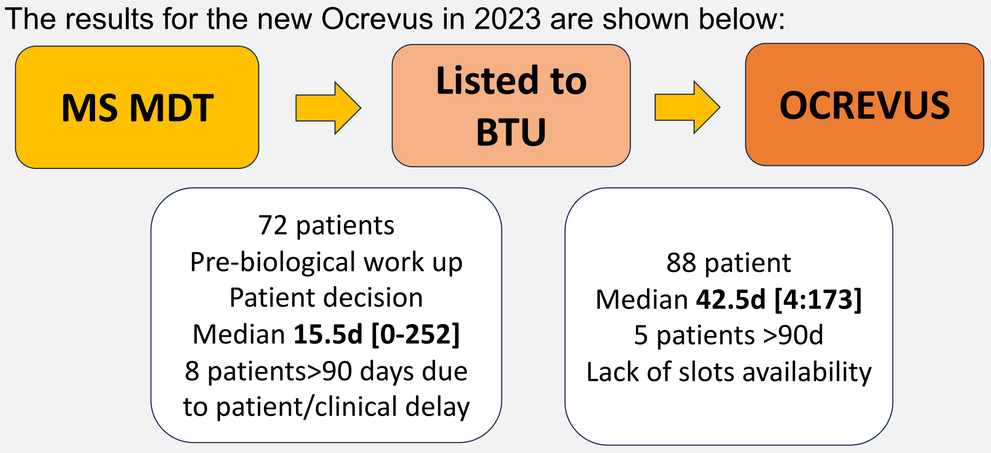
Tysabri:
Data was collected by direct observation of a powered sample of Tysabri IV (n:45) and Tysabri SC (n:4). Data included stages of the patient admission to BTU. Analysis of the data involved comparing median timings for each stage of the admission between the IV and SC Tysabri group. The cost of equipment for IV Tysabri was determined based on data provided by the local Procurement team.

Results

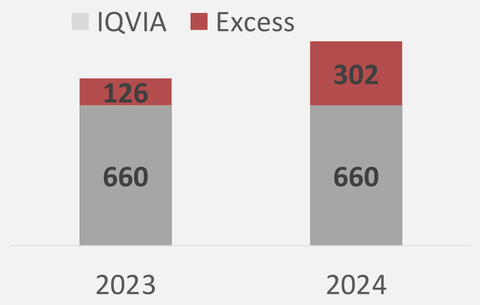
The current BTU workload includes 349 patients on Ocrevus, 236 on Tysabri IV and 17 on Tysabri SC.
The number of patients starting on Ocrevus in 2023 is shown below.



A total of 88 patients started on Ocrevus of which 72 were referred via MS MDT (66 first treatment, 2 Tecfidera, 4 Copaxone) and 16 were switched bypassing MS MDT (15 Tysabri, 1 Kesimpta).
The results for the new Ocrevus in 2023 are shown below:



The comparison between Ocrevus demand and IQVIA service provision is shown in the graph below as OD. ODs may have been overestimated for the demand due to extended infusion interval and for the provision due to IQVIA staff unplanned leave.



The results from the retrospective review of Ocrevus administration practice are shown below and compared observed practice timeframe for Ocrevus administration compared to the Ocrevus SmPC (2022)..

	SmPC	All cases (n:23)	Initial (n:3)	Standard (n:3)	Fast (n:17)
Precheck	30m/60m	33-66m	55m	40m	55m
Infusion	2.5/3.5/2h	3:06h	2:45h	3:35h	2:40h
Post-monitor	1h	1h	1h	1h	1h
Total	4.5/5.5/4h	5:13h	4:47h	5:30h	5:20h (4:44-6:30)
Active time	-	3:40h	3:10h	4:09h	3:05h (3-4:45)

The results of the comparison between Tysabri IV and SC are summarised below:

	Tysabri SC (n=4) (min)	Tysabri IV (n=45) (min)
Triage	15	15
Medical review	7	7
Cannulation	0	6
Drug Preparation	2	7
Drug Administration	2	86
Discharge	0	3
Total episode	36 [22:40]	128 [107:181]

In terms of cost, utilising Tysabri SC instead of Tysabri IV resulted in a savings of £6.1 per patient per infusion with a total saving of £79.3 per year per patient.

Discussion

The service evaluation findings are listed below:
- In 2023 there has been increased demand for Ocrevus compared to previous years, which is expected to continue and put increased demand on BTU resources.
- The median time from listing to DMT is 42.5d due to lack of slots availability.
- The current Ocrevus demand exceeds capacity provided by IQVIA and is predicted to exceed it more in 2024.
- Ocrevus administration practice is similar to the Ocrevus SmPC (2022) except for the fast rate group due to infusion related complications (5 of 17).
- Tysabri data showed a total time savings of 1 hour and 32 minutes per infusion in the Tysabri SC group.

Based on the results of the service evaluation the following strategies should be considered to improve access to IV DMT and meet increased demand:
- Increase staffing and slot availability although it would imply increased resources utilisation.
- Review slot allocation, which is currently one infusion per chair/day, based on the Ocrevus administration data with the aim to increase to 2 infusion per chair/day.
- Review staffing models and working hours (IQVIA 9-3 and BTU 7-19) to accommodate increase in slots availability.
- Consider switching more patients to Tysabri SC due to the time savings associated (1:32h) to reduce workload and increase slots availability.

Conclusions

The demand for intravenous DMTs indicates that the existing service on BTU requires either additional resourced or their optimisation to improve current waiting times and manage service demands. Identified areas of improvement include optimising Ocrevus slot availability and transitioning to Tysabri SC when clinically suitable.

References

- Tobin, O. W. (2021). Early diagnosis and treatment are associated with improved outcomes in patients with multiple sclerosis. Neurology, 97(17), 799-800.
- Ocrevus Summary of Product Characteristics (2022).