Increasing Awareness and Knowledge of Disease Modifying Therapies in Multiple Sclerosis amongst Junior Doctors and Pharmacists

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Background

Multiple Sclerosis (MS) is a lifelong condition which causes the immune system to attack the nerves in the brain and spinal cord. Over time this can affect the control the patient has over their body. It is estimated that there are over 100,000 people with MS in the UK and around 5,000 people are newly diagnosed each year. Of these, around 80% suffer relapses, where new symptoms appear or symptoms flare up. Disease modifying therapies (DMTs) are a group of drugs which can reduce how serious relapses are, the frequency of them and can slow down the effects of MS. DMTs are more effective when they are administered as early as possible, after diagnosis. However, as MS is a specialised field, healthcare professionals may only have limited knowledge regarding the disorder and treatment.

Northampton General Hospital (NGH) is a busy hospital that provides general acute services to a population of 380,000. This project was undertaken by a High Cost Medicines Pharmacist and supported by MS Specialist Nurses, Neurology Consultants and the Quality Improvement team at NGH. A questionnaire given to doctors and pharmacists (n=30) showed that only 7% were aware of the criteria for an MS patient to qualify for a DMT, only 7% were confident in their knowledge of the various DMTs available for MS patients and only 23% were confident in their awareness of how DMTs are monitored.

WHAT ARE WE TRYING TO ACCOMPLISH?

Aim

To increase awareness and knowledge of disease modifying therapies (DMTs) amongst junior doctors and pharmacists to 75% by October 2018.

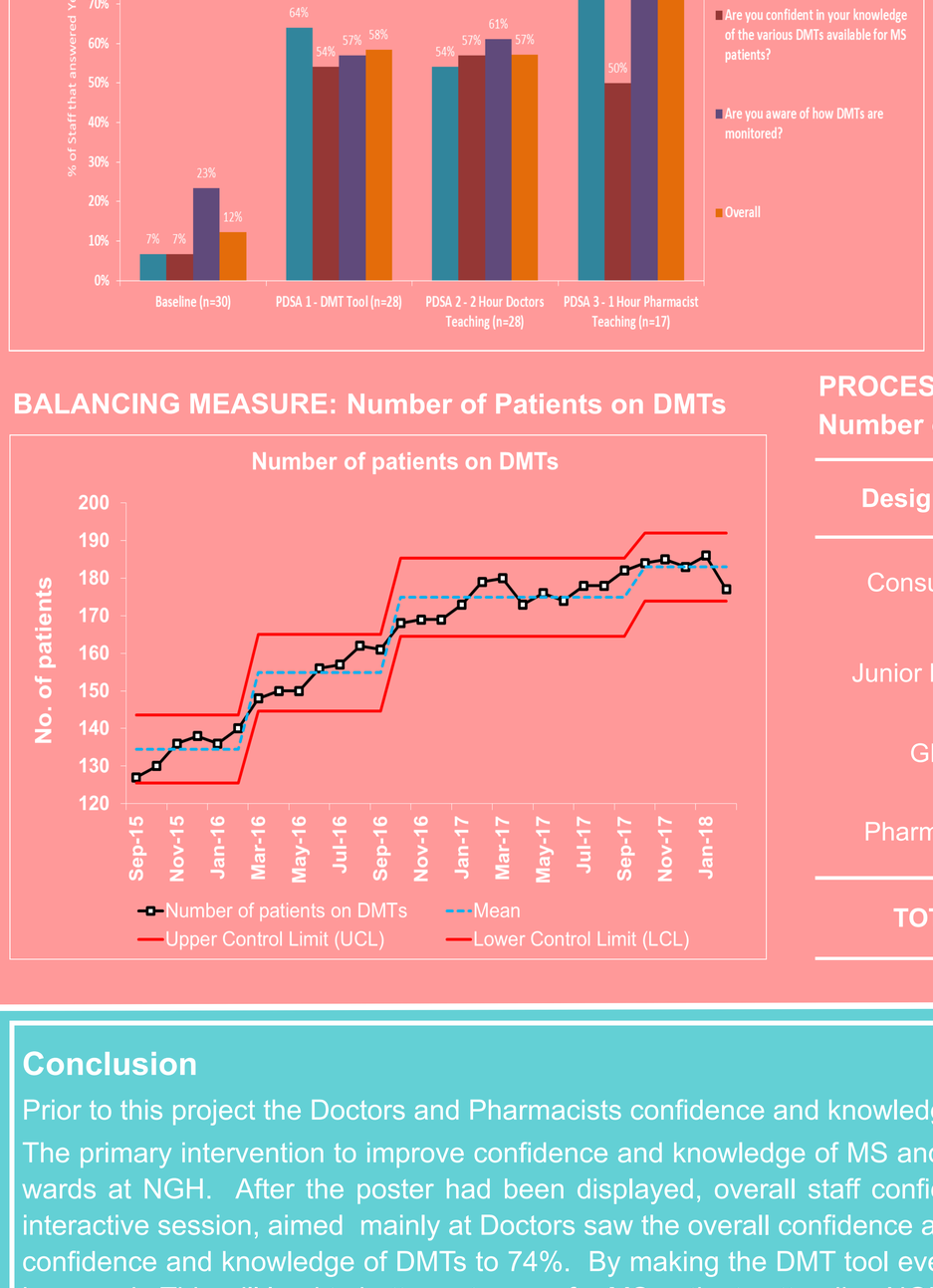
- **Education**
  - Deliver interactive lecture to junior doctors, consultants and pharmacists
  - Deliver clinical teaching session on DMT, aimed at pharmacists
- **DMT Tool**
  - Physical poster on wards and in pharmacy department
  - DMT tool to be made available on intranet and Dr Toolbox website and app

Benefits

- Increase DMT awareness and knowledge amongst healthcare providers
- Increase number of MS patients referred for consideration for DMT initiations
- Increase number of patients referred for specialist care

HOW WILLL WE KNOW A CHANGE RESULTS IN AN IMPROVEMENT?

OUTCOME MEASURE: Staff confidence in their knowledge of DMTs



BALANCING MEASURE: Number of Patients on DMTs

PROCESS MEASURE: Number of Staff Trained

Designation	No. Trained
Consultants	2
Junior Doctors	20
GPs	2
Pharmacists	21
TOTAL	45

WHAT CHANGE CAN WE MAKE THAT WILL RESULT IN AN IMPROVEMENT?

PDSA 1 DMT Tool (October 2017)

The DMT tool (extract on the right) was produced by the team, using a previous poster as a starting point. Reviews and updates took place across all sections, including:

- Prescribing criteria
- Monitoring parameters
- Groups of patients to be cautious
- Contraindications
- Side Effects
- New DMTs added

The content of the revised poster was reviewed by two Consultant Neurologists and once approved it was displayed within the Pharmacy department and on Medical wards.

The poster was well received and led to an increase in staff confidence in their knowledge of DMTs available for MS patients, the criteria to qualify for DMTs and how DMTs are monitored.

Trade Name	Aubagio
Generic name	Teriflunomide
Prescribing criteria (as per NICE, Department of Health Risk-sharing scheme, NHSE commission policy, SPC)1-10	-active RRMS 1. two clinically significant relapses in the previous 2 years 2. not have highly active or rapidly evolving severe RRMS
Administration route	Oral tablet
How often to take drug	14mg once daily
Degree of relapse reduction vs. placebo12	32%
Baseline screening	-Blood test: FBC, LFT -BP
Frequency of monitoring	2 weekly for first 6 months, and every 8 weeks thereafter. -For ALT raised between 2-3 times the ULN, monitor weekly. -discontinue if ALT>3 times ULN
Storage	
Caution	-elderly patients -Excess alcohol intake -impaired bone marrow function -New onset or worsening pulmonary symptoms, such as persistent cough and dyspnoea
Contra-indication	-severe renal impairment undergoing dialysis -severe hepatic impairment -severe immunodeficiency/ myelosuppression -severe active infection -nephrotic syndrome
Drug interactions	Multiple drug interactions (see SPC for full detail) -Rifampicin, antiepileptics -warfarin -rosuvastatin (reduce dose by 50%)
Common side effects: Non-specific	Anxiety
Haematology	Leucopenia, neutropenia, anemia, thrombocytopenia
Skin	Rash, acne
Gastrointestinal tract	Nausea, vomiting, diarrhoea, abdominal pain
Urinary	Urinary tract infection, cystitis
Neurological	Headache, paraesthesia, peripheral neuropathy
Respiratory	Upper respiratory tract infection, Interstitial lung disease, influenza
Cardiac	Hypertension, palpitations
Others	Alopecia, raised LFT, musculoskeletal pain
Less common but serious side effects	DRESS, ulcerative stomatitis, Stevens-Johnson syndrome and toxic epidermal necrolysis
Pregnancy	-Contraindicated, effective contraception required for up to 2 years after treatment. -Avoid breast feeding
Additional Points	Accelerated elimination procedure: for severe adverse reaction, or before conception. Stop treatment; take colestyramine 8g TDS or 50g activated powdered charcoal every 12 hours for 11 days.

PDSA 2 Doctors Teaching (December 2017)

A two hour interactive lecture was organised during the weekly mandatory core medical teaching programme. Teaching was provided on:

- Symptoms and signs of MS
- Non-pharmacology management of MS
- Pharmacology management of MS
- Criteria for MS patients to qualify for DMT
- Drug monitoring parameters
- Side effects

The teaching was carried out by the Neurology Consultants, MS Specialist nurse and lead Pharmacist. Pharmacists were also invited to attend the teaching session, however their attendance was low (4 of the 50 Pharmacists in the Trust attended).

PDSA 3 Pharmacists Teaching (February 2018)

Due to the low attendance of Pharmacists at the lecture, a specific one hour session was arranged and advertised during weekly pharmacy huddles. The teaching took place during the Pharmacists clinical lunchtime meeting and covered:

- Pharmacology management of MS
- Patient criteria for DMT
- Drug monitoring parameters
- Side effects
- Cautions

The session was led by the MS specialist nurse and lead pharmacist.

Planned PDSA Cycles

The next cycle will be to display the DMT tool in more areas across the Trust and enable access online via the Trust intranet and Dr Toolbox website and app.

Further training is also planned to capture more junior doctors and those joining the Trust in the next cohort (August 2018).

Conclusion

Prior to this project the Doctors and Pharmacists confidence and knowledge regarding Multiple Sclerosis (MS) and the disease modifying therapies (DMTs) used to treat it was low (12%, n=30).

The primary intervention to improve confidence and knowledge of MS and DMTs was the introduction of a DMT tool which was displayed in poster form in the Pharmacy Department and on medical wards at NGH. After the poster had been displayed, overall staff confidence and knowledge improved to 58%. This increase in knowledge was reinforced with teaching sessions. A two hour interactive session, aimed mainly at Doctors saw the overall confidence and knowledge of DMTs had been sustained. A one hour session, aimed at Pharmacists, saw a further improvement in overall confidence and knowledge of DMTs to 74%. By making the DMT tool even more accessible and carrying out further teaching sessions the increase in staff confidence and knowledge will be further improved. This will lead to better outcomes for MS patients attending NGH.

Quality Improvement at NGH

NHS Northampton General Hospital NHS Trust