

💋 Lahey Hospital & Medical Center

BACKGROUND

Lack of adherence to treatment, particularly with injectable medications, has been a significant problem in multiple sclerosis and estimated to occur in 20-50% of patients with consequent in relapse rate and disease increase progression. In recent years, therapeutic options for MS have expanded to include three oral options. The impact of oral DMTs in improving adherence to MS treatment is not well known.

OBJECTIVES

To determine if adherence and tolerability of oral DMTs is better than with injectables in our MS Center population.

METHODS

We developed the MS Treatment Adherence Questionnaire (MS-TAQ) and collected data from October-November 2014 (Fig. 1). The MS-TAQ is composed of 6 questions related to a patient's current DMT: number of missed doses in 4 weeks, reason dose was missed, perceived side effects, ease of administration, and medication satisfaction. Medication types were divided into 3 groups: subcutaneous or intramuscular (SC/IM), monthly IV injections, and oral DMTs. We analyzed the responses using Fisher's Exact Test (α =0.05) to determine if responses varied by medication type.



Do Oral Disease Modifying Agents (DMTs) Improve Adherence to MS Treatment? A Comparison of Oral and Injectable Drugs.

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1.	Which of the follow	ing are you cu	(MS-1) urrently taking	AQ) to treat your	MS? Circle	your answer:			
	Aubagio 14 mg	Avone	ex 30 mcg	-	Betasero	n 25 meg			
	Copaxone 20 mg	Copa	kone 40 mg		Gilenya (.5 mg			
	Plegridy 125 mcg	Rebif	22 mcg		Rebif 44	meg			
	Tecfidera 240 mg	Tysab	ori 300 mg						
2.	How many doses d	o you think yo	u missed or f	orgot in the la	st 4 weeks	? Circle your answ	rer:		
	0 missed doses	1-3 m	issed doses		4-6 misse	nd doses			
	7-9 missed doses	10 or	more missed d	oses					
3.	If you missed a dose last month, why did you miss a dose? Circle all that apply:								
	Too busy	-	Side	effects					
	Did not feeling it was	helping	Do no	t feel like you	need to tak	e a MS medicine			
	Need help administe	ring medicine	Trave	ling without ac	cess to me	dicine			
	Tired of taking the m	ing meaicine edicine	Eoroc	t like the meai t to take the m	cine edicine				
	Cost of the medicatio	'n							
	Design the second d								
4.	During the past 4 weeks, what side effects have you experienced from your medication? Circle all that apply								
	No side effects to my	· / medicine							
	Redness, lumps, or p	pain on skin	Flushing of fa	ice or arms	н	eart racing			
	Constipation		Chills, flu-like	symptoms	н	eadache			
	Abdominal pain		Nausea (ups	et stomach)	V	omiting			
	Other side effects		Double or blu	rry vision	A	bnormal lab results			
	ourse and enders								
5.	On a scale from 1-5	, how easy or	hard do you f	eel it is for yo	u to take y	our MS medicine?			
	1 Very energy	2 Fasu	3 Meutr	al Diffe	4	S Vacuation			
	very easy	Casy	NOUL	ai Chine	un,	very unitedit			
6.	How satisfied are y	ou with your n	nedication tre	atment during	the last 4	weeks?			
	1 Not	2 Somewhat	3 Mode	rately	4 Verv	S	otob		
	satisfied	satisfied	satisf	ed	satisfied	satisfie	d		
					Fi	gure 4 · Fa	se		
				fused Med njectables Orals 0	Fi %	gure 4: Easy	SC 40 Neu		
	Table 1: Rea	ason for 1	Missed I	fused Med njectables Orals 0	Fi % Very E	gure 4: Eas 20% Easy Easy Level of ease	Se 40 Net		
	Table 1: Rea	ason for 2	Missed I Type o	fused Med njectables Orals 0	Fi % Very B Medication, r	gure 4: Eas 20% Easy Easy Level of ease	Se 40 Neu		
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med

No need

Traveling

without access

Do not like it

Forgot

question

1 (1.080%)

2 (2.15%)

1 (1.08%)

went on to report a reason for missed dose

35 (37.63%)

¹Subjects who did not report a reason for missed dose because

²Four subjects taking injectables who did not have missed doses

they did not have missed doses, or because they skipped this

0 (0%)

2 (2.33%)

2 (2.33%)

13 (26.53%) 1 (3.33%)

0 (0%)

0 (0%)

0 (0%)

We would like to thank our colleague, Dr. Mary Anne Muriello, for referring her patients to our study.

> Disclosures The investigators do not have any conflicts of interests to disclose





Reason	Type of Medication in (%)				
recuser	Orals	Injectables	Infused Med		
Not side effects	27 (18.62%)	27 (20.15%)	26 (74.29%)		
Redness, lumps, pain of skin	5 (3.45%)	37 (27.61%)	0 (0%)		
Constipation	10 (6.90%)	5 (3.73%)	1 (2.86%)		
Abdominal pain	9 (6.21%)	1 (0.75%)	1 (2.86%)		
Diarrhea	11 (7.59%)	0 (0%)	2 (5.71%)		
Other	9 (6.21%)	4 (2.99%)	1 (2.86%)		
Flushing of face/arms	45 (31.03%)	3 (2.24%)	0 (0%)		
Chills, flu like symptoms	2 (1.38%)	19 (14.18%)	1 (2.86%)		
Nausea, upset stomach	8 (5.52%)	7 (5.22%)	1 (2.86%)		
Double, blurry vision	6 (4.14%)	7 (5.22%)	0 (2.86%)		
Heart racing	1 (0.69%)	4 (2.99%)	0 (0%)		
Headache	9 (6.21%)	18 (13.43%)	2 (5.71%)		
Vomiting	2 (1.38)	2 (1.49)	0 (0%)		
Abnormal lab results	1 (0.69%)	0 (0%)	0 (0%)		

Acknowledgements

(Fig. 2). missed (p=0.005). to

In our population, lack of adherence was significantly higher in patients receiving oral as compared to injectable DMTs, despite their reported ease of administration. Side effect profile may have been a contributing factor to this outcome. Health care providers should DMT strategies to improve implement adherence, regardless of medication route.



RESULTS

We had 209 patients, 75.1% female and 24.9% male, mean age of 50.4 years.

Eighty-nine patients (42.5%) were on oral medication, 90 (43%) on a SC/IM drug, and the remaining 30 (14.5%) on an IV infusion

Fifty-five percent of patients on oral DMTs, 70.8% of patients taking SC/IM, and 93.3% on patients receiving IV infusions reported no respectively doses (Fig. 3),

Ease of taking medication was reported by 77%, 60% and 33% of patients on oral, IV and SC/IM injections (Fig. 4), respectively (p<0.0001).

Reason for missed dose differed with respect medication type (p=0.017) with forgetfulness being reported in 37.6% and 26.5% of patients receiving oral and IM/SC DMTs respectively (Table 1).

Side effects were significantly different for each medication type (p<0.0001). Majority of those on IV did not experience side effects (74.3%), whereas only a minority of those taking orals (18.6%) and SC/IM (20.2%) responded as such (Table 2).

CONCLUSIONS