

Assessment of Relative Importance of Disease Modifying Treatment Attributes in Multiple Sclerosis Patients

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OBJECTIVE

To provide information on different disease modifying treatment (DMT) attributes' relative importance for MS patients.

BACKGROUND

DMT's vary in efficacy, side effect profile, route of administration and monitoring requirements. Understanding patients' needs and wishes regarding DMT is important since patient satisfaction with choice of treatment impacts adherence and patient management.

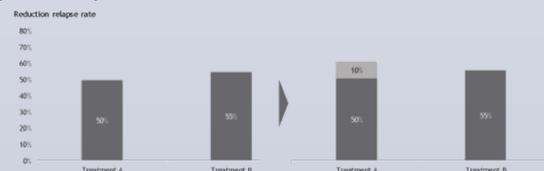
DESIGN/METHODS

Discrete choice experiment (DCE) including the following attributes: reduction in risk of relapse (RRR), reduction in risk of disease progression, adverse event profiles (AEs), route of administration, number of blood samples per year and possibility of treatment during pregnancy. Attributes originated from summary of product characteristics (SPC) of four DMTs. MS experts evaluated the DCE questionnaire. Patients were included through an unpaid online campaign.

Demographics and Respondent Characteristics

	Respondents
N	211
Male (%)	18.0%
Female (%)	82.0%
Age (average)	42.0
Years since diagnosis (average)	7.3
Years since first symptoms (average)	12.9
Employment	
Works full time for a company	20.9%
Flex job or part-time job	29.4%
Self-employed or freelancer	4.3%
Seeking work	3.8%
Student	4.3%
Disability pensioner	26.1%
Pensioner	2.8%
None of the above	8.5%
Current treatment	
Subcutaneous injection	4.7%
Intramuscular injection	5.7%
Intravenous injection	19.4%
Oral treatment	55.5%
No treatment	15.2%
Don't know	0.5%
Relapses last two years	
Number of self-reported relapses (average)	2.1
Don't know	9%

Example relative importance in DCE model



Discrete choice experiment (DCE)

Overview attributes and levels based on SPC

Attributes	Level 1 (Peginterferon beta-1a)	Level 2 (Dimethyl fumarate)	Level 3 (Teriflunomide)	Level 4 (Daclizumab)
Administration	Subcutaneous injection biweekly. Risk of injection site reactions.	Tablets twice daily.	Tablets once daily.	Subcutaneous injection monthly. Risk of injection site reactions.
Adverse events, risk of one or more*	Flu-like symptoms	Flushing in the face or on the body Diarrhoea Nausea Stomach pains	Headache Diarrhoea Nausea Increased liver count Hair thinning	Cough and cold Rashes Increased liver count
Can be used during pregnancy if physician assesses that benefits counterbalance the risks	Yes	Yes	No	Yes
Blood tests/year	2	4	6/36***	12
Risk of disease progression reduced	54%	0%**	0%**	76%
Relapse rate reduced	38%	48%	34%	54%

Example of DCE scenario

	Treatment A	Treatment B
Risk of relapse <i>The larger the number the fewer relapses</i>	Reduced by 48%	Reduced by 38%
Risk of disease progression <i>The higher the number the less the disease progression</i>	Reduced by 54%	Reduced by 54%
Administration	Tablets twice daily	Tablets once daily
Can be used during pregnancy <i>If physician assesses benefits counterbalance risks</i>	No	Yes
Blood tests per year	12	2
Common adverse events that can occur	Cough and cold, rashes, increased liver count	Flashes in the face or on the body, diarrhoea, nausea, stomach aches
Which treatment do you prefer?	<input type="checkbox"/>	<input type="checkbox"/>

RESULTS

The relative value of each categorical attribute (adverse events, route of administration, blood samples, pregnancy) was translated to an incremental increase in reduction in relapse rate (RRR) relative to avoiding the least preferred option.

RRR for each treatment was:

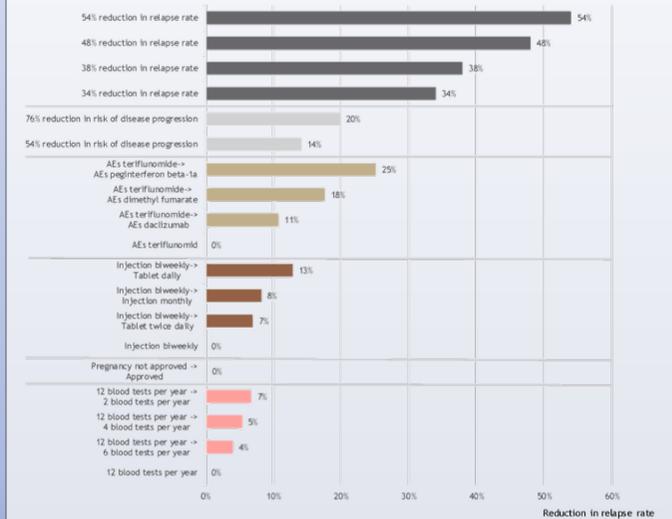
- 93% for daclizumab
- 84% for peg-interferon
- 78% for dimethyl fumarate
- 51% for teriflunomide

Main drivers of patient preferences were

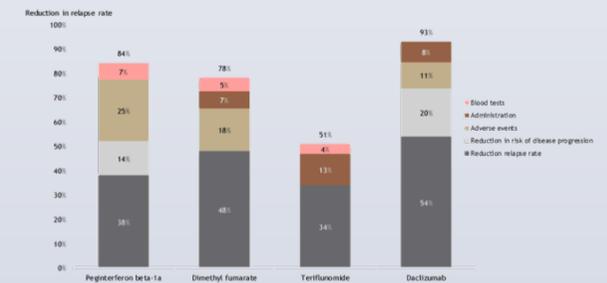
- efficacy on RRR
- reduction in disease progression
- AE profile.

Generally, patients prefer oral treatment, although once monthly subcutaneous injection equaled twice daily oral treatment. Frequent blood sampling could outweigh the benefit of an oral treatment.

Relative importance of attributes converted to corresponding



Comparison of treatments



CONCLUSIONS

We used DCE to compare DMTs based on the SPC. The model makes it possible to objectively compare patient preferences regarding DMTs and could be a useful tool in the development of treatment guidelines.

Disclosures & Contact

Dr. Sejbaek reports grants and personal fees from Almirall, Biogen, Merck, Novartis & Teva outside the submitted work.

Ms. Bøgelund reports personal fees from Biogen outside the submitted work

Mr. Johansen is employed by Biogen

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