

Adherence issues in Multiple Sclerosis Treatment: How can Acceptance Measurement Help Understanding Patients' Concerns and Working on Solutions?

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BACKGROUND

- Management of most chronic conditions requires the patients to take long-term treatments.
- Lack of adherence and persistence are major barriers to treatment efficacy.
- Patients' behaviour and attitude toward their treatment are hypothesised to result from their complex evaluation of the risk-benefit ratio of their treatment.
- Measuring patients' acceptance of their medication can help better understand and predict patients' behaviour towards treatment.

OBJECTIVES

This study aimed at evaluating the levels of acceptance and adherence of patients with multiple sclerosis (MS) in real life using a European patient online community.

METHODS

Study design

- An observational, cross-sectional study was conducted through the French, English, German, Spanish and Italian Carenity platforms between Oct 2015 and Feb 2016¹.
- The Carenity platform is a global online patient community in which both patients and carers, concerned by a chronic disease, can share their experience, find basic tools for health follow-up and contribute to medical research by participating in online RWE studies.
- Patients included in this analysis were adult patients suffering from MS and currently receiving treatment.

Assessments

All patients connecting to the Carenity platform were invited to complete an online questionnaire including:

- Questions on demographics, chronic disease and medication.
- The ACCEptance by the Patients of their Treatment (ACCEPT®) questionnaire^{2,3}:
 - 25 items covering six dimensions corresponding to treatment-attributes.
 - Scores range from 0 to 100 with higher score indicating greater acceptance.
- The Morisky Medication Adherence Scale (MMAS-8®)⁴:
 - 8-item scale with a score ranging from 0 to 8 with the following interpretation: 0 to <6 (low adherence), 6 to <8 (moderate adherence) and 8 (high adherence).

Statistical analysis

- Descriptive statistics were used to describe the patient population and the ACCEPT® and MMAS-8® scores.
- The distribution of adherence and acceptance scores across MS treatments was analysed.
- Pearson correlations between the Acceptance General score, MMAS-8® adherence score and ACCEPT® treatment-attributes scores were calculated.

RESULTS

Population (Figure 1 and Table 1)

- 542 MS patients were included in the analysis, 152 took immunostimulants, 219 took immunosuppressants, 15 took another MS treatment and 156 took another central nervous system (CNS) treatment.
- On this poster, we focused on two treatments: immunostimulants and immunosuppressants.

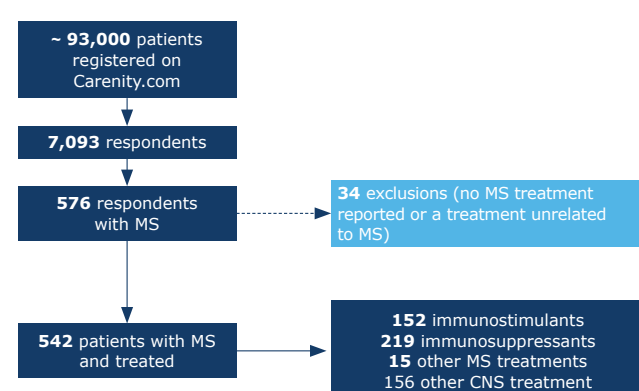


Figure 1: Patient disposition

Table 1: Description of the patient population (N=371)

	Immunostimulants (N=152)	Immunosuppressants (N=219)
Gender, male - n (%)	38 (25.0%)	53 (24.2%)
Age, years - mean (SD)	46.5 (11.6)	42.8 (9.3)
≥ 10 years since diagnosis - n (%)	67 (44.1%)	100 (45.7%)
Employed, professional status - n (%)	93 (61.2%)	122 (55.7%)

Level of adherence (Figure 2)

- Mean MMAS adherence score was between 6 and 7, indicating that MS patients adhere moderately to their treatment.
- There was a significant relationship between treatment class and adherence: patients taking immunosuppressants were more adherent than those taking immunostimulants.

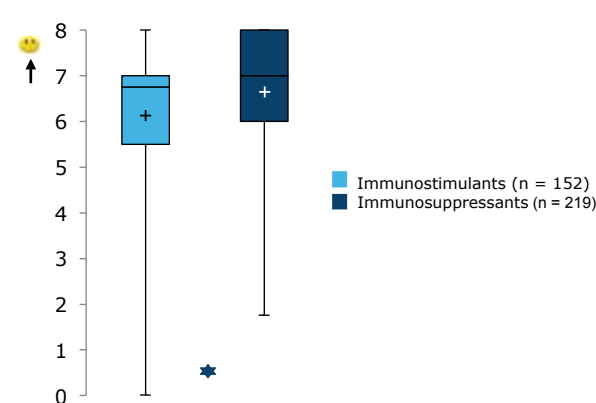
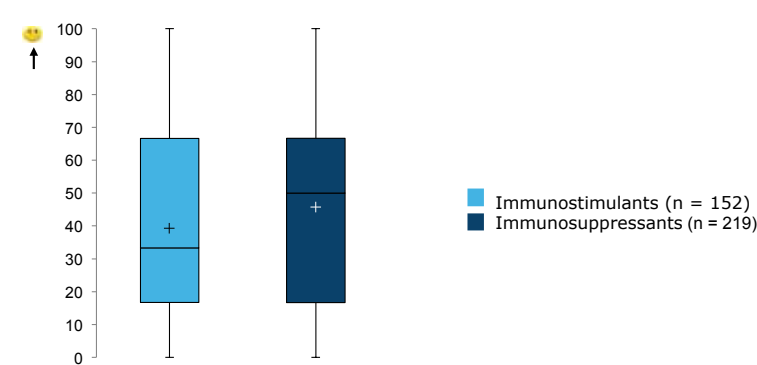


Figure 2: MMAS-8 Adherence score in MS patients per treatment class (N=371)



Box = interquartile (Q3-Q1); + = mean; middle bar = median; upper and lower bars = observed max - min values. Star indicates significance (p<0.05).

Figure 3: ACCEPT General acceptance score in MS patients per treatment class (n=371)

ACCEPT - General Acceptance Key Findings (Figure 3)

- General Acceptance was low (less than 50 in mean), whatever the treatment received.
- General Acceptance was lower for immunostimulants than for immunosuppressants.
- Difference between the 2 groups close to be significant (p = 0.06)

ACCEPT - Treatment-attributes Key Findings (Figure 4)

- The domain where patients reported highest mean score:
 - Acceptance/Side Effects (62.1) for immunostimulant-treated patients
 - Acceptance/Regimen Constraints (86.6) for immunosuppressant-treated patients
- The domain where patients reported lowest mean score:
 - Acceptance/Medication Inconvenience for both groups
- Significant differences for which lower scores were observed for immunostimulant-treated patients compared to immunosuppressant-treated patients:
 - Acceptance/Medication Inconvenience
 - Acceptance/Long Term
 - Acceptance/Regimen Constraints

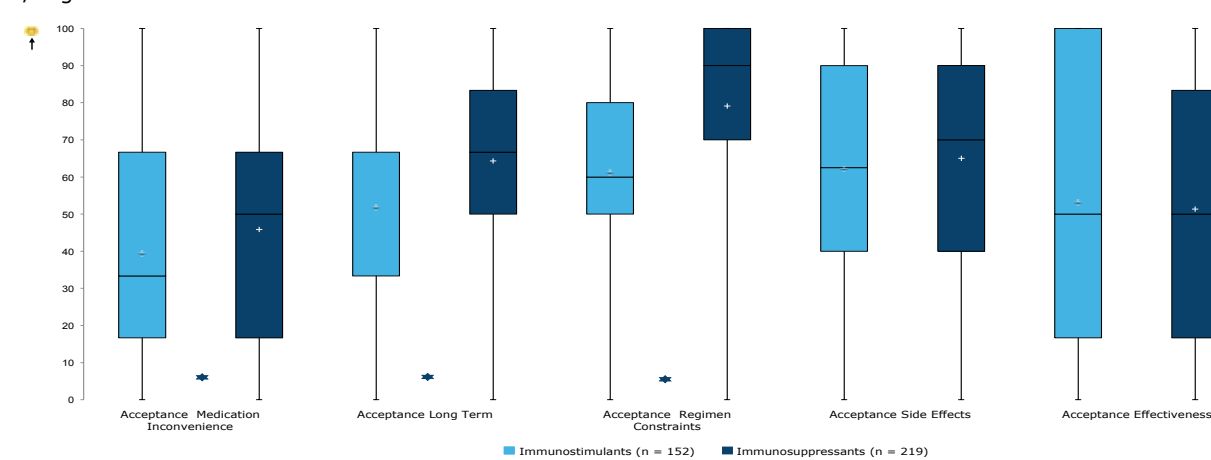


Figure 4: ACCEPT treatment-attributes scores per treatment class (N=371)

Acceptance in more detail (Figure 5)

- Exploring ACCEPT treatment-attributes scores at the item-level:

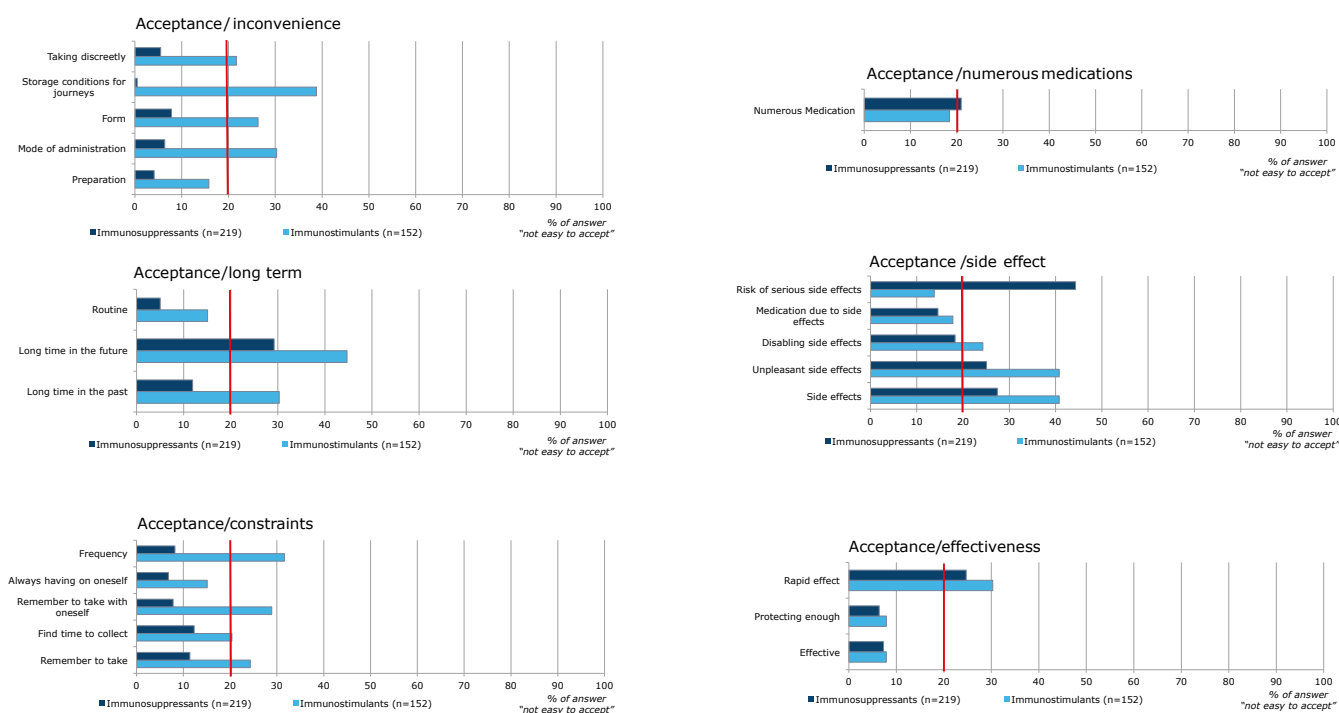


Figure 5: ACCEPT item scores per main treatment (N=371)

Link between general acceptance, adherence and ACCEPT treatment-attributes (Table 2)

- General Acceptance was primarily correlated with Acceptance/Effectiveness (r=0.64), and somewhat with the practical attributes of treatment (r=0.14 to 0.30).
- Adherence was primarily correlated with the practical attributes (r=0.20 to 0.26) rather than with the perception of a treatment's effectiveness (r=0.16).
- Correlation between General Acceptance and Adherence (r=0.25) was significant, but was quite small.

Table 2: Pearson Correlations* between ACCEPT and MMAS-8 scores in Multiple Sclerosis Patients (N = 386)

	Acceptance/Medication Inconvenience	Acceptance/Long Term	Acceptance/Regimen Constraints	Acceptance/Side Effects	Acceptance/Effectiveness	Acceptance/General Score	Adherence Score
Acceptance/General Score	R = 0.23 p<0.0001	R = 0.14 p=0.005	R = 0.28 p<0.0001	R = 0.30 p<0.0001	R = 0.64 p<0.0001	1	R = 0.25 p<0.0001
Adherence Score	R = 0.20 p<0.0001	R = 0.22 p<0.0001	R = 0.26 p<0.0001	R = 0.20 p<0.0001	R = 0.16 p=0.002	R = 0.25 p<0.0001	1

*Notes: Correlations were based on a sample that varied between 386 and 382 patients, which included all MS patients taking any MS treatment. The dimension Acceptance/Numerous Medication is not represented since an ordinal variable.

Correlation between 0 and 0.2
Correlation between 0.2 and 0.4
Correlation between 0.4 and 0.7

CONCLUSIONS

- Adherence scores were moderate and the class of treatment had a significant effect.
 - Patients taking immunosuppressants were more adherent to treatment than those taking immunostimulants.
- General Acceptance was low and far from ideal:
 - General Acceptance level was higher in patients receiving immunosuppressants than in patients receiving immunostimulants and difference was close to be significant.
- Immunosuppressant-treated patients had better scores than immunostimulant-treated patients in Acceptance/Medication inconvenience, Long-Term, Regimen constraints dimensions.
- Many patients reported an issue with time needed for treatment to be beneficial.
- Routine treatment was not an issue per se — all patients are used to their treatment — but having to take their medication for the rest of their life was an issue for all patients.
- Side effects were issues for both groups, but not for same reasons:
 - Long-term risk was the issue for patients taking immunosuppressants.
 - Current experience of unpleasant side effects was the issue for patients taking immunostimulants.
- Acceptance and Adherence are two related but different constructs:
 - In MS, general acceptance was driven by efficacy, while current adherence was driven by regimen constraints.

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