

# Dramatic improvement in treatment acceptance observed in patients with Multiple Sclerosis switching treatment: a real-world study

Vilcot Tanguy<sup>1</sup>, de Bock Elodie<sup>1</sup>, PhD, Chekroun Michael<sup>2</sup>, Arnaud Benoit<sup>1</sup>, PhD  
<sup>1</sup>Patient-Centered Outcomes, Mapi, An ICON plc Company, Lyon, France, <sup>2</sup>Carenity, Paris, France

## Background

- Most chronic conditions require the patients to take long-term treatments.
- Lack of adherence and persistence are major barriers to optimal treatment benefit.
- Patients' behaviour and attitude towards their treatment are hypothesised to result from their complex evaluation of the risk-benefit ratio of their treatment.
- Measuring patients' acceptance of their medication may help better understand and predict patients' behaviour towards treatment.
- Patients with Multiple Sclerosis (MS) are prescribed long-term treatments to slow the progression of their chronic disease. Important unmet needs are still voiced by patients.
- Frequent treatment discontinuation and switching are reported in studies<sup>2,3</sup> as disease modified therapies in MS patients.
- In recent years, new MS and Central Nervous System (CNS) treatments have been put on the market with the aim of addressing unmet needs.

## Objectives

The objective of this study is to evaluate the impact of treatment change on the level of acceptance of medication in patients with Multiple Sclerosis (MS), in real life.

## Methods

### Study design

- An observational, cross-sectional study was conducted in two waves in 2014 through the French Carenity platform and in 2016 through the French, English, German, Spanish and Italian Carenity platforms.
- Carenity is an international online patient community devoted to people with chronic diseases. It enables patients and caregivers to share their experience as well as information, follow the course of their disease and contribute to medical research by generating real-world patient insights through online surveys.
- Patients included in this analysis were adults with MS and currently receiving treatment.

### Assessments

- All patients connecting to the Carenity platforms 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<sup>4,5</sup>:

– 25 items covering six dimensions corresponding to one general acceptance dimension (A/General) and five multi-item treatment-attributes dimensions (Acceptance/Medication Inconvenience, Acceptance/Long Term Treatment, Acceptance/Regimen Constraints, Acceptance/Side Effects and Acceptance/Effectiveness).

– Scores range from 0 to 100 with higher score indicating greater acceptance.

### Statistical analysis

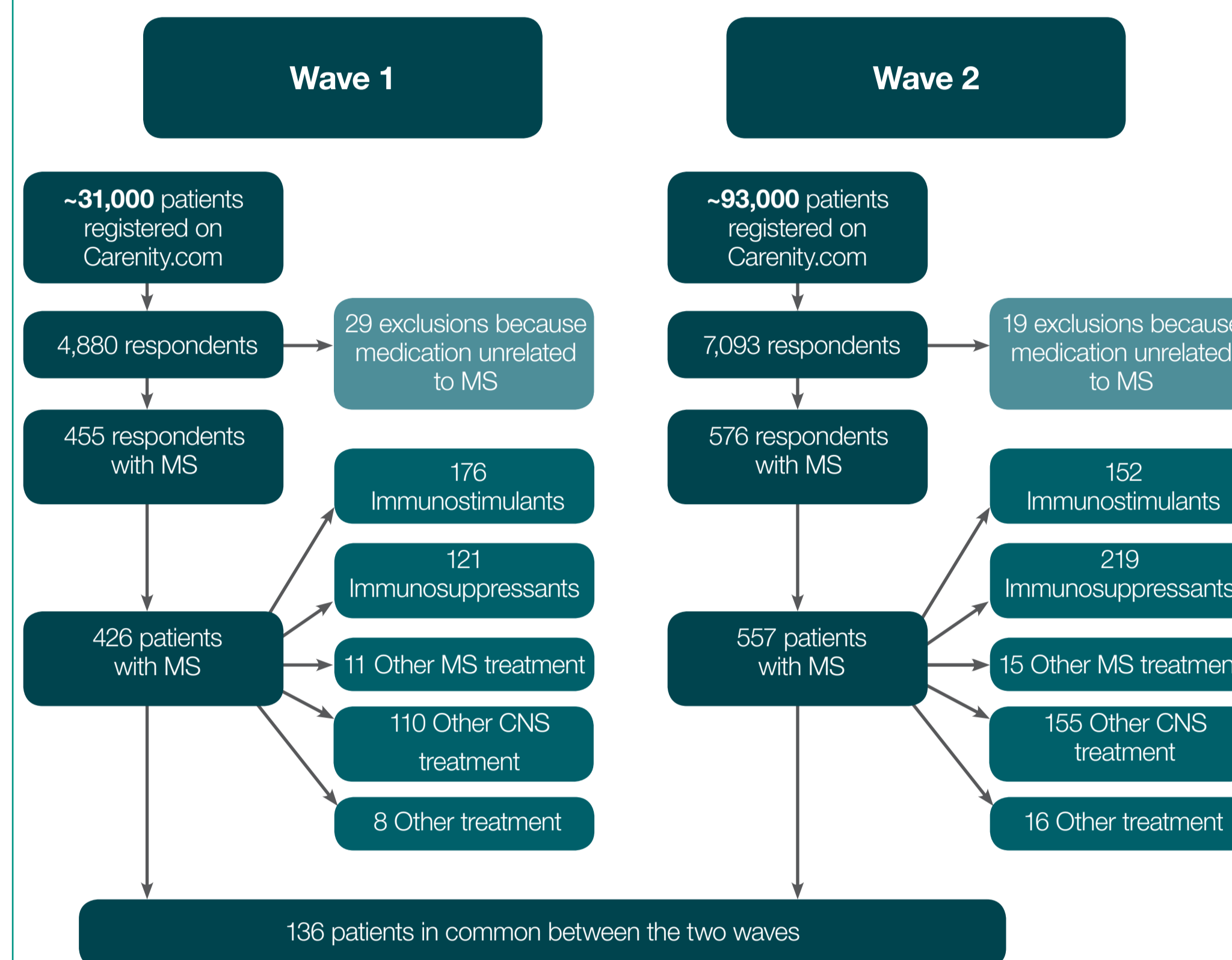
- Descriptive statistics were used to describe the patient population and the ACCEPT® scores.
- The distribution of acceptance scores across MS treatments was analysed.
- Student t-test has been used to assess significant difference between two groups.

## Results

### Population (Figure 1 and Table 1)

- Among the 421 patients with MS in wave one, 136 were also included in wave 2. Among these 136 patients, 83 took the same treatment in both waves while 53 changed treatment.

Figure 1: Patient disposition



- Patients are in average 47 years old. A majority of them are employed and they are mainly female.

Table 1: Description of the population (n=136)

	Did not change treatment (N=83)	Changed treatment (N=53)	Total (N=136)
Age, years – mean (sd)	46.7 (11.5)	48.8 (9.6)	47.5 (10.8)
Gender, Male – n (%)	21 (25.3%)	14 (26.4%)	35 (25.7%)
Employed, Professional status – n (%)	46 (55.4%)	32 (60.4%)	78 (57.4%)

### Treatment disposition (Table 2)

- The proportion of patients with immunostimulants decreased from 43% to 21%.
- Conversely, the proportion of patients with immunosuppressants rose from 32% to 47% and the proportion taking Other CNS treatment rose from 18% to 27%.
- Patients changed their immunostimulants mainly for immunosuppressants or other CNS treatment.

Table 2: Treatments transition table (n=136)

Wave 1 \ Wave 2	Immunostimulants	Immunosuppressants	Other MS treatment	Other CNS treatment	Other treatment	TOTAL
Immunostimulants	27	13	1	17	0	58 (43%)
Immunosuppressants	0	41	0	2	0	43 (32%)
Other MS treatment	0	0	2	0	0	2 (1%)
Other CNS treatment	2	9	0	13	1	25 (18%)
Other treatment	0	1	2	5	0	8 (6%)
TOTAL	29 (21%)	64 (47%)	5 (4%)	37 (27%)	1 (1%)	136

### Acceptance evolution (Figure 2)

- On average, patients with MS reported an increase in all Acceptance scores but the Acceptance/Effectiveness one.
- The largest and significant improvements were on Acceptance/Medication Inconvenience (+14.6) and on Acceptance/Regimen Constraints (+8.1).

Figure 2: Acceptance scores by wave (n = 136)

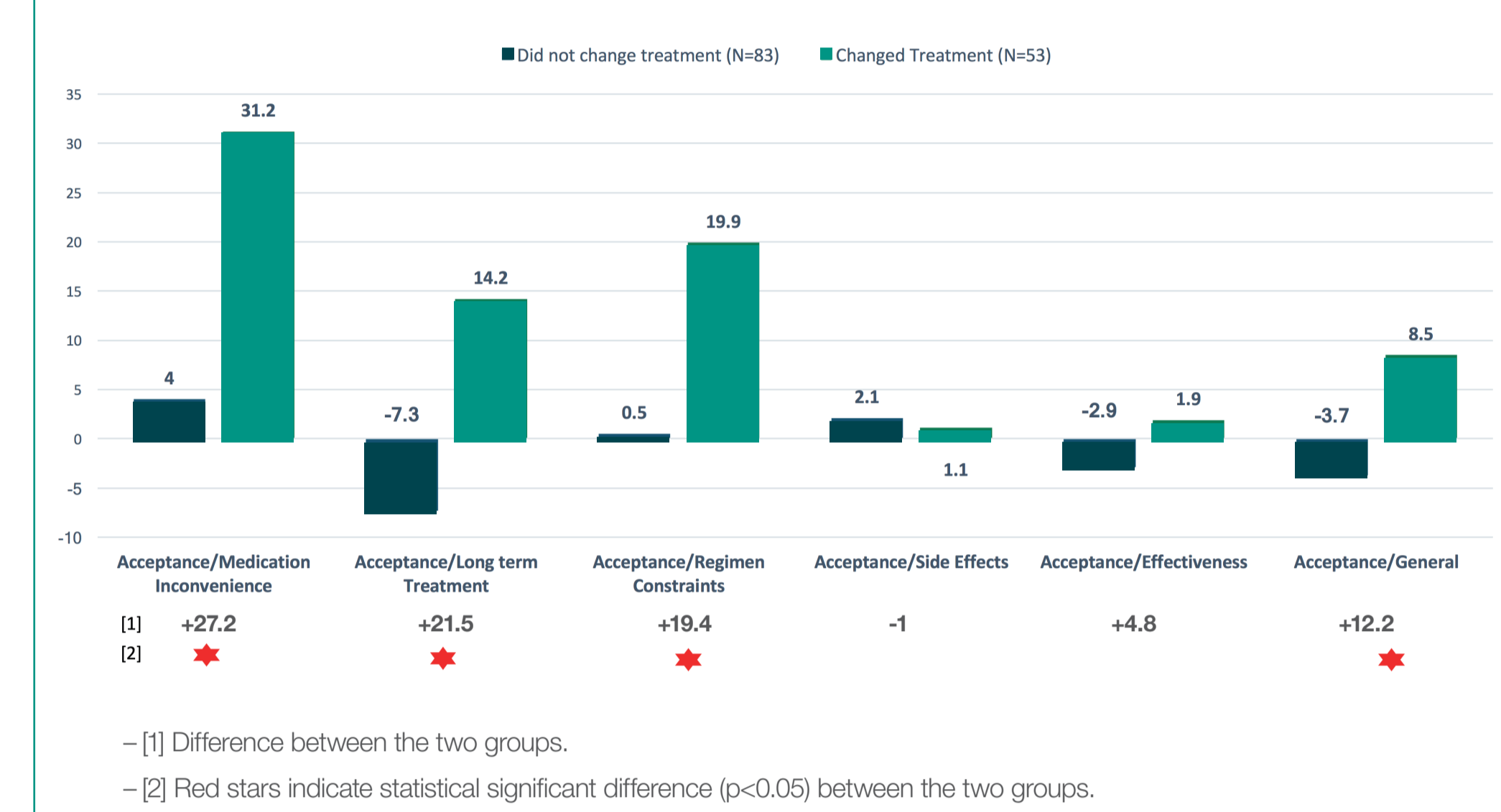


- [1] Difference between the two waves.
- [2] Red stars indicate statistical significant difference (p<0.05) between the two waves.

### Acceptance evolution on treatment change (Figure 3)

- Patients who changed treatment reported a statistically significant more important evolution than patients who did not change treatment, in all the Acceptance scores except the Acceptance/Side Effects and the Acceptance/Effectiveness one.
- Statistically significant improvements were found in patients who changed treatment on Acceptance/Medication Inconvenience (+31.2); Acceptance/Regimen Constraints (+19.9); Acceptance/Long-Term Treatment (+14.2) and Acceptance/General (+8.5).
- Conversely, no statistically significant changes were noted for the 83 patients with the same treatment in both waves.

Figure 3: Acceptance evolution by treatment change (N=136)



- [1] Difference between the two groups.
- [2] Red stars indicate statistical significant difference (p<0.05) between the two groups.

## Conclusions

Patients who changed their treatment reported dramatic improvement in treatment acceptance scores. The majority of changes were from immunostimulants to immunosuppressants and other CNS treatment. Recent Acceptance study<sup>6</sup> in MS has shown that acceptance leads to persistence. This suggests that improvement in practical attributes of treatment can turn into increased persistence and ultimately long-term benefits in real life.

## References

- Tobin et al. (2015), Stopping immunomodulatory medications in MS: Frequency, reasons and consequences. *Mult Scler Relat Disord.* 4(5):437-43
- Evans et al (2016). Adherence and persistence to drug therapies for multiple sclerosis: a population-based study. *Mult Scler Relat Disord.* 8:78-85
- Hendin B et al. Treatment satisfaction significantly improves in patients with multiple sclerosis switching from interferon beta therapy to peginterferon beta 1a every 2 weeks
- Marant C et al. *Patient.* 2012;5:239-249
- Arnaud B et al. *Patient.* 2017;10(1):81-92
- Mékies, et al., Factors Associated with Acceptance to Intramuscular Interferon β-1a in Patients with Multiple Sclerosis: Results from the ADOPTÉ Study

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## For more information, please contact

Benoit.Arnaud@iconplc.com,  
www.iconplc.com