Title
FLOODLIGHT: Smartphone-Based Self-Monitoring is Accepted by Patients and Provides Meaningful, Continuous Digital Outcomes Augmenting Conventional In-Clinic Multiple Sclerosis Measures

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Introduction
Sensor-based, active and passive smartphone-based self-monitoring (SSM) may be more sensitive and specific than periodic in-clinic assessments to measure progression in MS.

Objective
To report an analysis of adherence, patient satisfaction questionnaire results, and correlations between in-clinic tests and FLOODLIGHT SSM measures (NCT02952911).

Methods
Patients with MS (18–55 years; EDSS score 0–5.5; n=76) and healthy controls (n=25) received a smartphone and smartwatch prompting FLOODLIGHT SSM, comprising ‘active tests’ and ‘passive monitoring’ for 24 weeks. Primary analysis assessed participants’ adherence (proportion of weeks with ≥3 days completed testing and ≥4 hours/day passive monitoring) and patient satisfaction with the FLOODLIGHT SSM solution. In-clinic tests and brain MRI assessments were performed. Secondary analyses compared FLOODLIGHT SSM outcomes 1) between patients with MS and healthy controls and
2) with in-clinic outcomes in patients with MS. The correlation between FLOODLIGHT SSM outcomes and in-clinic tests was reported using Spearman’s correlation coefficient (SCC).

**Results**

Interim analysis of adherence of 61 patients who completed the study showed 76.5% adherence to active tests and 83.2% to passive monitoring. Satisfaction amongst patients with MS who completed the study (n=61) was good to excellent (termination visit average score: 73.33/100). Correlations between FLOODLIGHT SSM and conventional in-clinic assessments at baseline were as follows: Correct responses from smartphone-based Symbol Digit Modalities Test (SDMT) vs oral SDMT: SCC=0.635, p<0.001, n=53; Time between two consecutive pinch attempts in the FLOODLIGHT Pinching Test vs 9-Hole Peg Test: SCC=0.508, p<0.001, n=54; Turning speed measured with the FLOODLIGHT Five-U-Turn Test vs Timed 25-Foot Walk test: SCC=–0.524, p<0.001, n=55. Further comparisons (baseline FLOODLIGHT SSM vs in-clinic testing MS outcomes) will be presented.

**Conclusions**

Patients’ adherence and satisfaction plus correlations observed between in-clinic assessments and digital outcomes show potential for the FLOODLIGHT SSM solution to capture meaningful outcomes augmenting the clinical picture in patients with MS.

**Disclosures**

Sponsored by F. Hoffmann-La Roche Ltd; writing and editorial assistance was provided by Articulate Science, UK.

X Montalban has received speaker honoraria and travel expense reimbursement for participation in scientific meetings, been a steering committee member of clinical trials or served on advisory boards of clinical trials for Actelion, Biogen, Celgene, Merck, Novartis, Oryzon, Roche, Sanofi Genzyme and Teva Pharmaceutical.

P Mulero has nothing to disclose.

L Midaglia has nothing to disclose.
J Graves has received grants or research support from Biogen, Genentech, Inc. and S3 Group, and has received compensation for a nonbranded resident and fellow education seminar supported by Biogen.

SL Hauser serves on the scientific advisory boards for Annexon, Symbiotix, Bionure and Molecular Stethoscope, is on the board of trustees for Neurona Therapeutics and also has received travel reimbursement and writing assistance from F. Hoffmann-La Roche Ltd for CD20-related meetings and presentations.

L Julian is an employee of Genentech, Inc., and a shareholder of F. Hoffmann-La Roche Ltd.

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M Lindemann has nothing to disclose.