## Statistical analysis plan

Efficacy and safety data will be obtained from the modified intention-to-treat (mITT) dataset, consisting of patients randomized to treatment and receiving at least one tDCS session. To estimate changes in the primary outcome measurement, the Fatigue Impact Scale (FIS) total score, from baseline to week four and follow-up, a mixed model for repeated measures (MMRM) with a restricted maximum likelihood (REML) approach and Kenward-Roger adjustment of degrees of freedom will be employed. Least-squares (LS) means, within and between-group differences in LS means, and corresponding 95%CI will be calculated, and Sidak correction will be applied. Secondary outcomes (FIS subscales, A-PASC total score and subscales, PHQ-9, GAD-7, cognitive tests, and AQOL-6D) will be subjected to the same MMRM analysis, with covariate selection adapted to each outcome. The occurrence of side effects will compared by Fisher's exact test.