Official Title of the study:

"Study of an Intraoperative Frontal Electroencephalographic Marker of Preoperative Frailty in Patients Over 65 Years of Age for Elective Non-cardiac Surgery."

NCT number: NCT04783662

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Statistical Plan: Intraoperative EEG Marker of Preoperative Frailty in Elderly Patients

We will study the correlation between alpha (8-12Hz) spectral power and total spectral power (0.5-30 Hz) with the different frailty scales (Fried, FRAIL, CFS) using Spearman correlation. Then, we will use an empirical bootstrap for statistical inferences for EEG analysis. First, we will bootstrap for window estimates that do not overlap. Next, we will compute the median of the bootstrap estimates at the subject level, and then compute the group median of this estimate. We will calculate the median difference between the groups and then iterate the above procedure 5,000 times to obtain a distribution of the median difference between the groups. We will calculate the 99% confidence interval of this distribution. Our threshold of statistical significance will be defined when the upper and lower confidence intervals of the mean difference distribution do not border zero in a contiguous frequency range greater than 2 bandwidths (2 W). As a sensitivity analysis, we will re-analyze our results after performing a matching by age and a previous cognitive evaluation.

For descriptive statistics, continuous data will be presented using the mean ± standard deviation or the median and its interquartile range, as appropriate. In addition, the groups will be compared using Student's t test for independent samples or Mann-Whitney U test according to their distribution. In the case of categorical data, they will be presented as absolute counts and their corresponding percentage. Differences between groups will be studied using Fisher's test or Chi square. For the association study, univariate and multivariate linear or logistic regressions will be performed, as appropriate. A significance level of 0.05 with its respective 95% confidence interval will be considered.