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**Table e-1: Patients characteristics of MRI-defined severity groups**

Age is presented as mean and range. EDSS is presented as median and range. Time from disease onset and CSF parameters are presented as mean ± SD. CIS=clinically isolated syndrome, RRMS = relapsing-remitting multiple sclerosis, NIND = non-inflammatory neurologic diseases, OIND = other inflammatory neurologic diseases, and CEL = contrast-enhancing lesion.



**Table e-2: Univariate regression analysis for CSF/serum biomarkers**

Univariate regression analysis of indicated parameters for the allocation to MRI-defined disease severity groups (MRI-high versus MRI-low). Sex: females group was taken as reference category. Oligoclonal bands: positive group was taken as reference category. Statistically significant values are highlighted in bold.



**Supplemental figure 1: Estimation of odds ratio**

Examination of additive information of cumulative sums and composite score reported by boxplots for odds ratios with whiskers representing 95% confidence interval. The dashed horizontal line at 0.5 indicates random chance.