**Supplementary tables**

**Supplementary Table 1:** Multivariable linear regression (MLR) with BDI-II score as dependent variable (n=781).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Independent Variable** | **Regression Coefficient** | **95%-CI** **LL** | **95%-CI****UL** | **p-value** | **VIF** |
| Sex | -0.087128 | -0.957742 | 0.783485 | 0.844305 | 1.050257 |
| Age | -0.019666 | -0.061698 | 0.022365 | 0.358643 | 1.079753 |
| Smoking | 0.347343 | 0.091165 | 0.603522 | 0.007938 | 1.023006 |
| Diagnosis | -0.112320 | -0.912465 | 0.687825 | 0.782958 | 1.026421 |
| Current relapse | 1.481270 | 0.273624 | 2.688916 | 0.016282 | 1.054171 |
| EDSS | -0.048992 | -0.483748 | 0.385763 | 0.824984 | 1.224264 |
| FSMC | 0.262414 | 0.239967 | 0.284862 | 3.2917E-89 | 1.138744 |
| 25-OH-vitamin D serum concentration  | -0.032138 | -0.061888 | -0.002389 | 0.034267 | 1.097030 |
| Month of sampling | -0.077702 | -0.193474 | 0.038070 | 0.188055 | 1.069757 |
| EBNA1-IgG titer  | 0.000119 | -0.000177 | 0.000415 | 0.431554 | 1.018539 |

Linear Regression Model: R2: 0.449.

Coding: sex: 0 - female, 1 - male; age - years; smoking: 0 - No, 1 - Occasionally, 2 - ≤ 5 cigarettes per day, 3 - 6-10 cigarettes per day, 4 - 11-20 cigarettes per day, 5 - >20 cigarettes per day; diagnosis: 0 - CIS, 1 - RRMS; current relapse: 0 - No, 1 - Yes; EDSS - score; FSMC - total score; 25-OH-vitamin D serum concentration - ng/ml; month of sampling - month (January = 1 to December = 12); EBNA1-IgG titer - U/ml.

Abbreviations: 95%-CI - 95% confidence interval; BDI-II - Beck Depression Inventory II; CIS - clinically isolated syndrome; EBNA1-IgG - EBV nuclear antigen-1 IgG; EDSS - expanded disability status scale; FSMC - fatigue scale motor cognition; LL - lower limit; RRMS - relapsing-remitting multiple sclerosis; UL - upper limit; VIF - variance inflation factor.

**Supplementary Table 2:** Multivariable linear regression (MLR) with BDI-II score as dependent variable including the independent variable “time in days between last corticosteroid administration and date of visit” (n=755). Mean difference of corticosteroid administration to date of visit was 67.1 days (95%-CI 60.3-73.8).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Independent Variable** | **Regression Coefficient** | **95%-CI****LL** | **95%-CI****UL** | **p-value** | **VIF** |
| Sex | -0.034798 | -0.922166 | 0.852569 | 0.938655 | 1.053577 |
| Age | -0.021994 | -0.065488 | 0.021499 | 0.321154 | 1.118288 |
| Smoking | 0.390101 | 0.129211 | 0.650991 | 0.003433 | 1.022648 |
| Diagnosis | -0.000556 | -0.824052 | 0.822939 | 0.998942 | 1.042142 |
| Current relapse | 1.592051 | 0.290192 | 2.893910 | 0.016606 | 1.083155 |
| EDSS | -0.108083 | -0.554634 | 0.338468 | 0.634811 | 1.247032 |
| FSMC | 0.266393 | 0.243340 | 0.289446 | 5.5772E-87 | 1.159643 |
| 25-OH-vitamin D serum concentration | -0.032326 | -0.062473 | -0.002179 | 0.035622 | 1.105259 |
| Month of blood sampling | -0.073045 | -0.191066 | 0.044976 | 0.224740 | 1.075736 |
| EBNA1-IgG titer  | 0.000163 | -0.000144 | 0.000471 | 0.297759 | 1.020195 |
| Days between last corticosteroid administration and date of visit | 0.000698 | -0.003712 | 0.005109 | 0.756095 | 1.097223 |

Linear Regression Model: R2: 0.455.

Coding: sex: 0 - female, 1 - male; age - years; smoking: 0 - No, 1 - Occasionally, 2 - ≤ 5 cigarettes per day, 3 - 6-10 cigarettes per day, 4 - 11-20 cigarettes per day, 5 - >20 cigarettes per day; diagnosis: 0 - CIS, 1 - RRMS; current relapse: 0 - No, 1 - Yes; EDSS - score; FSMC - total score; 25-OH-vitamin D serum concentration - ng/ml; month of sampling - month; EBNA1-IgG titer - U/ml; days between last corticosteroid administration and date of visit - days.

Abbreviations: 95%-CI - 95% confidence interval; BDI-II - Beck Depression Inventory II; CIS - clinically isolated syndrome; EBNA1-IgG - EBV nuclear antigen-1 IgG; EDSS - expanded disability status scale; FSMC - fatigue scale motor cognition; LL - lower limit; RRMS - relapsing-remitting multiple sclerosis; UL - upper limit; VIF - variance inflation factor.