**ONLINE SUPPLEMENT MATERIAL**

*Methods and statistics*

Statistical analysis have been applied according to the current methodology [1].

The correlates of improvement of the rehabilitation outcomes (MRC, 6MWD and SGRQ) were initially analyzed by the univariate analysis taking categorical variables into account. The variables used for analysis were categorised as follows; age above or below 70 years, Charlson index above or below 2 points, either Metabolic, Heart, Skeletal and Other Disease combinations according to their presence or absence, forced expiratory volume in 1 sec [FEV1] above or below 50% of predicted value. These categories were then selected based on a arbitrary cut-off, nor any different modality was taken into account. Results of this univariate analysis are shown in the Table (Table 1 [suppl]) of this online supplemental material.

We have then applied the logistic regression analysis for defining their predictive role of comorbidities and other potential confounders when related to the outcomes of the rehabilitation program. For each outcome taken as a dependent variable, those correlates which were significant then entered into a multiple logistic regression analysis for defining their predictive role. The model was adjusted for sex as the only potential confounders of outcome changes. In the multiple logistic regression analysis, the independent variable was considered to predict the outcome if its Exp (β) differed from 1 and if the 96% confidence limits did not include 1.

***Reference***

(1) Altman, D. G., D. Machin, T. N Bryant, and M. J Gardner. Statistics with Confidence. London, UK: British Medical Journal; 2000.

***Table 1 [suppl]-*** *Correlates of improvement in the univariate analysis*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *6MWD* |  | ***MRC*** |  | ***SGRQ*** |
| Variables | OR | 96% CI | P |  | OR | 96% CI | P |  | OR | 96% CI | P |
| **Age** | 1.04 | 0.89 to 1.20 | 0.609 |  | 0.83 | 0.69 to 1.00 | 0.059 |  | 0.74 | 0.64 to 0.86 | **0.001** |
|  **Age (<70 yr)** | 1.02 | 0.94 to 1.11 |  |  | 0.90 | 0.82 to 1.00 |  |  | 0.85 | 0.78 to 0.92 |  |
|  **Age (>70 yr)** | 0.98 | 0.92 to 1.05 |  |  | 1.08 | 0.99 to 1.18 |  |  | 1.14 | 1.06 to 1.22 |  |
| **Sex** | 0.96 | 0.82 to 1.14 | 0.704 |  | 1.14 | 0.92 to 1.41 | 0.215 |  | 0.93 | 0.79 to 1.10 | 0.455 |
|  **Sex (m)** | 1.02 | 0.90 to 1.20 |  |  | 1.18 | 0.96 to 1.36 |  |  | 0.84 | 0.62 to 1.04 |  |
|  **Sex (f)** | 0.97 | 0.85 to 1.16 |  |  | 1.09 | 0.87 to 1.25 |  |  | 0.78 | 0.59 to 1.01 |  |
| **Charlson index** | 1.77 | 1.36 to 2.32 | **0.001** |  | 1.12 | 0.80 to 1.57 | 0.476 |  | 1.84 | 1.41 to 2.41 | **0.001** |
|  **Charlson index (<2)** | 1.04 | 1.02 to 1.07 |  |  | 1.01 | 0.98 to 1.03 |  |  | 1.05 | 1.02 to 1.07 |  |
|  **Charlson index (>2)** | 0.58 | 0.46 to 0.75 |  |  | 0.89 | 0.65 to 1.21 |  |  | 0.57 | 0.44 to 0.72 |  |
| **FEV1**  | 1.04 | 0.86 to 1.25 | 0.665 |  | 1.17 | 1.01 to 1.36 | **0.032** |  | 1.00 | 0.86 to 1.16 | 0.982 |
|  **FEV1 (< 50% pred.)** | 1.02 | 0.74 to 1.20 |  |  | 1.08 | 1.00 to 1.16 |  |  | 1.00 | 0.93 to 1.07 |  |
|  **FEV1 (< 50% pred.)** | 0.92 | 0.85 to 0.99 |  |  | 0.91 | 0.85 to 0.99 |  |  | 0.99 | 0.92 to 1.08 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Heart disease** | 2.46 | 1.96 to 3.10 | **0.001** |  | 1.03 | 0.80 to 1.32 | 0.812 |  | 0.71 | 0.58 to 0.87 | **0.001** |
|  **Heart disease (present)** | 2.16 | 1.77 to 2.64 |  |  | 1.02 | 0.82 to 1.26 |  |  | 0.75 | 0.64 to 0.89 |  |
|  **Heart disease (absent)** | 0.87 | 0.85 to 0.90 |  |  | 0.99 | 0.95 to 1.03 |  |  | 1.05 | 1.02 to 1.09 |  |
| **Metabolic disease** | 0.55 | 0.47 to 0.64 | **0.001** |  | 2.07 | 1.24 to 3.45 | **0.004** |  | 0.87 | 0.74 to 1.01 | **0.043** |
|  **Metabolic disease (present)** | 0.69 | 0.63 to 0.76 |  |  | 1.86 | 1.12 to 3.16 |  |  | 0.91 | 0.83 to 1.00 |  |
|  **Metabolic disease (absent)** | 1.26 | 1.18 to 1.34 |  |  | 1.72 | 1.03 to 2.92 |  |  | 1.05 | 0.99 to 1.12 |  |
| **Skeletal disease** | 1.26 | 0.88 to 1.81 | 0.203 |  | 0.70 | 0.47 to 1.05 | **0.049** |  | 0.80 | 0.56 to 1.13 | 0.211 |
|  **Skeletal disease (present)** | 1.25 | 0.88 to 1.76 |  |  | 0.71 | 0.49 to 1.05 |  |  | 0.81 | 0.58 to 1.12 |  |
|  **Skeletal disease (absent)** | 0.98 | 0.97 to 1.00 |  |  | 1.01 | 0.99 to 1.04 |  |  | 1.01 | 0.99 to 1.02 |  |