

Predicting change in physical activity after stroke

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Abstract

Background and aims

Physical activity (PA) reduces the risk of stroke and improves functional outcome. We aimed to investigate predictors for decrease and increase in PA after stroke.

Methods

We used the Physical Activity Scale for the Elderly (PASE) questionnaire score for pre-stroke PA at inclusion and PA at six months. Main outcomes were decrease in PA to the lowest PASE score quartile from any higher, and increase from the lowest quartile to any higher. We created two cross validated, regularised, predictive models with available clinical variables.

Results

We included 522 patients from The Efficacy of Citalopram Treatment in Acute Ischemic Stroke (TALOS) trial. Median [IQR] age was 68 [59, 76], NIHSS score 3 [2, 5] and 180 (34%) were females. In total, 77 patients (19.7%) decreased in PA and 63 (48.1%) increased. The decrease model had sensitivity 0.862, specificity 0.290 and AUROC of 0.607. Variables used were increasing age, living alone, daily or occasionally smoking, hypertension, previous myocardial infarction and stroke severity. The increase model performed with sensitivity 0.882, specificity 0.246 and AUC at 0.606. Variables used were increasing age, female sex, living alone, excess alcohol intake, previous atrial fibrillation, hypertension, diabetes, peripheral arterial disease and pre-stroke mRS >0.

Conclusions

We found that change in PA after stroke is highly dynamic, and our prediction models performed only modestly, with baseline factors influencing both PA decrease and increase. These findings highlight the need for a systematic rehabilitation programme to avoid decrease and stimulate increased PA post stroke for all patients.