

## Abstracts

### Comparative effectiveness of exercise and drug interventions on mortality outcomes: metaepidemiological study

The objective of this study was to determine the comparative effectiveness of exercise v. drug interventions on mortality outcomes using a metaepidemiological study. The authors included meta-analyses of randomised controlled trials with mortality outcomes comparing the effectiveness of exercise and drug interventions with each other or with control (placebo or usual care) and the main outcome measure was mortality.

They included 16 (4 exercise and 12 drug) meta-analyses. Incorporating an additional 3 recent exercise trials, the review collectively included 305 randomised controlled trials with 339 274 participants. Across all four conditions with evidence on the effectiveness of exercise on mortality outcomes (secondary prevention of coronary heart disease, rehabilitation of stroke, treatment of heart failure, and prevention of diabetes), 14 716 participants were randomised to physical activity interventions in 57 trials. No statistically detectable differences were evident between exercise and drug interventions in the secondary prevention of coronary heart disease and prediabetes. Physical activity interventions were more effective than drug treatment among patients with stroke (odds ratios, exercise v. anticoagulants 0.09, 95% credible intervals 0.01 - 0.70 and exercise v. antiplatelets 0.10, 0.01 - 0.62). Diuretics were more effective than exercise in heart failure (exercise v. diuretics 4.11, 1.17 - 24.76). Inconsistency between direct and indirect comparisons was not significant.

Although limited in quantity, existing randomised trial evidence on exercise interventions suggests that exercise and many drug interventions are often potentially similar in terms of their mortality benefits in the secondary prevention of coronary heart disease, rehabilitation after stroke, treatment of heart failure, and prevention of diabetes.

Naci H, Ioannidis JPA. *BMJ* 2013;347. [<http://dx.doi.org/10.1136/bmj.f5577>]

### Effectiveness of interdisciplinary primary care approach to reduce disability in community dwelling frail older people: Cluster randomised controlled trial

This study used a cluster randomised controlled trial to evaluate whether an interdisciplinary primary care approach for community dwelling frail older people is more effective than usual care in reducing disability and preventing (further) functional decline in 12 general practices in the south of The Netherlands.

The participants were 346 frail older people (score  $\geq 5$  on Groningen Frailty Indicator); 270 (78%) completed the study. General practices were randomised to the intervention or control group. Practices in the control group delivered care as usual. Practices in the intervention group implemented the 'Prevention of Care' (PoC) approach, in which frail older people received a multidimensional assessment and interdisciplinary care based on a tailor-made treatment plan and regular evaluation and follow-up.

The primary outcome was disability, assessed at 24 months by means of the Groningen Activity Restriction Scale. Secondary outcomes were depressive symptomatology, social support interactions, fear of

falling, and social participation. Outcomes were measured at baseline and at 6, 12, and 24 months' follow-up.

One hundred and ninety-three older people in the intervention group (6 practices) received the PoC approach; 153 older people in the control group (6 practices) received care as usual. Follow-up rates for patients were 91% ( $n=316$ ) at 6 months, 86% ( $n=298$ ) at 12 months and 78% ( $n=270$ ) at 24 months. Mixed-model multilevel analyses showed no significant differences between the two groups with regard to disability (primary outcome) and secondary outcomes. Pre-planned subgroup analyses confirmed these results.

This study found no evidence for the effectiveness of the PoC approach. The study contributes to the emerging body of evidence that community based care in frail older people is a challenging task. More research in this field is needed.

Metzelthin SE, et al. *BMJ* 2013;347. [<http://dx.doi.org/10.1136/bmj.f5264>]

### Long-term cognitive impairment after critical illness

Survivors of critical illness often have a prolonged and disabling form of cognitive impairment that remains inadequately characterised.

This study enrolled adults with respiratory failure or shock in the medical or surgical intensive care unit (ICU), evaluated them for in-hospital delirium, and assessed global cognition and executive function 3 and 12 months after discharge with the use of the Repeatable Battery for the Assessment of Neuropsychological Status (population age-adjusted mean ( $\pm$  standard deviation (SD)) score  $100 \pm 15$ , with lower values indicating worse global cognition) and the Trail Making Test, Part B (population age-, sex- and education-adjusted mean score  $50 \pm 10$ , with lower scores indicating worse executive function). Associations of the duration of delirium and the use of sedative or analgesic agents with the outcomes were assessed with the use of linear regression, with adjustment for potential confounders.

Of the 821 patients enrolled, 6% had cognitive impairment at baseline, and delirium developed in 74% during the hospital stay. At 3 months, 40% of the patients had global cognition scores that were 1.5 SD below the population means (similar to scores for patients with moderate traumatic brain injury) and 26% had scores 2 SD below the population means (similar to scores for patients with mild Alzheimer's disease). Deficits occurred in both older and younger patients and persisted, with 34% and 24% of all patients with assessments at 12 months that were similar to scores for patients with moderate traumatic brain injury and scores for patients with mild Alzheimer's disease, respectively. A longer duration of delirium was independently associated with worse global cognition at 3 and 12 months ( $p=0.001$  and  $p=0.04$ , respectively) and worse executive function at 3 and 12 months ( $p=0.004$  and  $p=0.007$ , respectively). Use of sedative or analgesic medications was not consistently associated with cognitive impairment at 3 and 12 months.

Patients in medical and surgical ICUs are at high risk for long-term cognitive impairment. A longer duration of delirium in the hospital was associated with worse global cognition and executive function scores at 3 and 12 months.

Pandharipande PP, et al. *N Engl J Med* 2013;369:1306-1316. [<http://dx.doi.org/10.1056/NEJMoa1301372>]