The strict per protocol continuation figures were 77 in the immediate and 47 in the delayed insertion group (66.4 vs 46.5% respectively; P = 0.004).

A new pregnancy was recorded in 22 women in the intention to treat groups: six in the immediate and 16 in the delayed insertion group (4.5 vs 12.2%) respectively; RR 0.37 (95% CI: 0.15-0.91; P = 0.027).

Eleven (50%) of the pregnancies occurred in women who did not have the IUS fitted, eight (36.4%) were in women who requested IUS removal, and two (9.1%) were in women who experienced total or partial IUS expulsion. A new TOP was recorded in nine women, four in the immediate and five in the delayed insertion group (3.0 vs 3.8% respectively; RR 0.79 (95% CI: 0.22-2.87; P = 0.748).

Women having an IUS inserted immediately after MTOP were more likely to be still using it one year later, and less likely to become pregnant during that year, compared with women randomised to a delayed IUS placement.

What the study cannot say is whether the IUS is the most acceptable or reliable form of reversible contraception after TOP. However, what it does show is that fitting an IUS straightaway, or very shortly after MTOP, appears to be a more effective strategy than delaying placement for 2-4 weeks.

DR CHRIS BARCLAY

Korjamo R, Mentula M, Heikinheimo O. Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy – 1 year continuation rates: a randomised controlled trial. *BJOG* 2017; https://doi.org/10.1111/1471-0528.14802

Mental health

Can exercise prevent cognitive decline?

Exercise does not appear to slow the rate of cognitive decline or reduce the risk of dementia, a UK prospective cohort study has found.

A total of 10,308 participants (6,895 men) recruited to the Whitehall II study between 1985 and 1988 were followed »

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up until 2013. Physical activity was assessed on seven occasions using a self-completion questionnaire. The time spent taking part in mild, moderate and vigorous exercise was calculated. Physical activity was also categorised using the WHO physical activity target of 2.5 hours/week of moderate-vigorous activity.

Cognitive testing in the domains of memory, executive function and language was introduced at the fourth assessment in 1997-9 and repeated at all subsequent assessments. Dementia was identified using NHS registers.

After adjustment for age and gender, there was no association between the level of physical activity in 1997-9 and cognitive decline over the subsequent 15 years. Furthermore, there was no association between the level of physical activity at the initial assessment (1985-8) and incident dementia over the 27 years of follow-up. The hazard ratio for those achieving the recommended target level of exercise was 1.00 (95% CI: 0.80-1.24). These results were not affected by further adjustment for sociodemographic, behavioural and health factors.

During the follow-up period, 329 participants were diagnosed with dementia. Retrospective trajectories of the average time per week spent taking part in total, mild and moderate-vigorous exercise were modelled for those with dementia (baseline = year of diagnosis) and for those without dementia (baseline = year of death or end of the trial).

The two groups were equally active during the period of 28 to 10 years prior to baseline. However, compared with the group who did not develop dementia, physical activity in those with dementia started to decline nine years prior to diagnosis (-0.39 hour/week for moderate to vigorous physical activity; P = 0.05) and the divergence increased progressively up to the time of diagnosis (-1.03 hours/week; P = 0.005).

The authors conclude that there is no neuroprotective effect of physical activity and that the previously observed association between physical inactivity and cognitive impairment is the result of declining physical activity during the preclinical phase of dementia.

This negative conclusion is consistent with the results of intervention studies. A Cochrane review found no evidence that aerobic exercise or increased fitness improved cognitive function in older people.[1] A systematic review found no replicated evidence that any form of exercise intervention was effective in patients with mild cognitive impairment.[2] A recent randomised trial with 1,635 participants found that a 24-month moderate intensity physical activity programme for sedentary older adults did not improve cognitive function.[3]

DR PHILLIP BLAND

Sabia S, Dugravot A, Dartigues J-F et al. Physical activity, cognitive decline, and risk of dementia: 28 year follow-up of Whitehall II cohort study. *BMJ* 2017;357: j2709

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