New study examines premature menopause and effects on later life cognition

7 May 2014

Premature menopause is associated with long-term negative effects on cognitive function, suggests a new study published today (7 May) in *BJOG: An International Journal of Obstetrics and Gynaecology* (*BJOG*).

The average age of menopause is around 50 years in the Western World. Premature menopause refers to menopause at or before 40 years of age, this could be due to a bilateral ovariectomy, (surgically induced menopause)or non-surgical loss of ovarian function (sometimes referred to as 'natural' menopause).

The study, based on a sample of 4868 women, used cognitive tests and clinical dementia diagnosis at baseline and after two, four and seven years and aimed to determine whether premature menopause can have an effect on later-life cognitive function. The effects of the type of menopause, whether natural or surgical, and use of hormone treatment were also examined.

Of the 4,868 women in this study, natural menopause was reported by 79% of the women, 10% as a surgical menopause and 11% of women reported menopause due to other causes, such as radiation or chemotherapy. Around 7.6% of the women in the study had a premature menopause and a further 12.8% an early menopause (between the ages of 41 and 45 years). Over a fifth of the women used hormone treatment during the menopause.

Results show that in comparison to women who experienced menopause after the age of 50, those with a premature menopause had a more than 40% increased risk of poor performance on tasks assessing verbal fluency and visual memory and was associated with a 35% increased risk of decline in psychomotor speed (coordination between the brain and the muscles that brings about movement) and overall cognitive function over 7 years. There was no significant association with the risk of dementia.

Furthermore, both premature ovarian failure and premature surgical menopause were associated with a more than two-fold risk of poor verbal fluency. In terms of visual memory, premature ovarian failure was associated with a significantly increased risk of poor performance, and there was a similar trend for premature surgical menopause.

When the potential modifying effect of using hormone treatment at the time of premature menopause was examined, there was some evidence that it may be beneficial for visual memory, but it could increase the risk of poor verbal fluency.

Dr Joanne Ryan, Postdoctoral Research Fellow, Neuropsychiatry: Epidemiological and Clinical Research, Hospital La Colombiere, Montpellier, said:

"Both premature surgical menopause and premature ovarian failure, were associated with long-term negative effects on cognitive function, which are not entirely offset by menopausal hormone treatment.

"In terms of surgical menopause, our results suggest that the potential long-term effects on cognitive function should form part of the decision-making process when considering ovariectomy in younger women."

Pierre Martin Hirsch, *BJOG* deputy editor-in-chief added:

"With the ageing population it is important to have a better understanding of the long term effects of a premature menopause on later-life cognitive function and the potential benefit from using menopausal hormone treatment.

"This study adds to the existing evidence base to

suggest premature menopause can have a significant impact on cognitive function in later life which healthcare professionals must be aware of."

More information: J Ryan, J Scali, I Carrière, H Amieva, O Rouaud, C Berr, K Ritchie, ML Ancelin. The impact of menopause on cognitive function in later life. *BJOG* 2014; 10.1111/1471-0528.12828

Provided by Wiley