

POEMs

Patient-Oriented Evidence that Matters

For this issue we have selected three POEMs. The first should reassure women that oral contraceptive use is not associated with an overall increase in cancer. The second POEM reminds us that investigative procedures have disadvantages as well as advantages and the final POEM reports a meta-analysis showing no benefit for the use of anti-oxidants in the prevention of macular degeneration. Editor.

Clinical question

Do women who have ever used oral contraceptives have an increased risk of cancer?

Bottom line

Oral contraceptive (OC) use does not increase a woman's overall risk of cancer and may slightly decrease it. However, the risk for particular cancers may be increased or decreased, depending on the duration of use and the length of time since last use. (LOE = 1b)

Reference

Hannafor PC, Selvaraj S, Elliott AM, Angus V, Iversen L, Lee AJ. Cancer risk among users of oral contraceptives: cohort data from the Royal College of General Practitioners' oral contraception study. *BMJ* 2007; 335(7621):651-659.

Study Design

Cohort (prospective)

Funding

Government

Setting

Outpatient (primary care)

Synopsis

Starting in 1968, 1400 general practitioners from throughout the United Kingdom recruited approximately 46 000 women – half of whom were taking OCs ('ever users') and half of whom were not – and followed them up for up to 38 years. The women's average age at enrolment was 29 years, and most were white. Although only 26% of the original women completed the study, the researchers were able to follow the outcomes of more 75% of all patients using the National Health Service. They analysed two datasets: the general practitioner observation data set, consisting of data collected until 1996 (the year the study stopped), and a main dataset that also included the flagged cancer and mortality data up to December 2004. Overall,

the main dataset represents an impressive 744 717 woman-years of observations in users of OCs and 339 349 woman-years in never users. Over 36 years of observation, there was no difference in mortality between the groups. However, after adjusting for age, smoking and social status, and parity, there was a 12% reduction in the risk of any cancer in ever users compared with never users (adjusted relative risk [ARR] = .88; 95% CI, .83 - .94). Ever users were 28% less likely to develop colon/rectal cancer (RR = .72), 42% less likely to develop uterine body cancer (RR = .58), and 46% less likely to develop ovarian cancers (RR = .54). However, women who used OCs for at least eight years had a 22% increased overall risk of any cancer as compared with never users. Cervical and central nervous system or pituitary cancers increased in this group, although the increase in cervical cancer could be due to lead time bias in women with more monitoring. Conversely, the risk of ovarian cancer dropped with longer OC use. Breast cancer risk was not affected. The strength of this study is the long period of monitoring and the ability to continue monitoring through mortality statistics from the National Health Service. The reduced risk of ovarian and uterine cancers is consistent with results from the Oxford/Family Planning Association Study and contrasts with an interim report from the original cohort in 1989 that found an increased risk of gynaecologic cancers. The data are also consistent with results from the Nurses Health Study, a large US cohort study that found no increased risk of cancer mortality. However, the data were not specific enough to compare directly with other studies that have found an increased risk of breast cancer in certain situations, such as current users (Collaborative Group on Hormonal Factors in Breast Cancer, 1996), those with a family history of breast cancer (POEMs article 30124), and increased premenopausal breast cancer in OCP users (Kahlenborn et al., 2006). Written by Cung Pham, MD

Clinical question

How common are incidental brain findings in the general population?

Bottom line

Incidental brain findings, especially asymptomatic brain infarcts, benign tumors, and aneurysms, are relatively common (>10%) in a population of older adults. Having this information may lead to a beneficial intervention (for example, the repair of a 15mm aneurysm) or it may worsen quality of life and increase health care costs (for example, by causing worry and repeat imaging for a small aneurysm or meningioma that is unlikely to become symptomatic). Longitudinal studies are needed to better delineate when we should worry and when we should reassure our patients. (LOE = 1b)

Reference

Vernooij MW, Ikram MA, Tanghe HL, et al. Incidental findings on brain MRI in the general population. *N Engl J Med* 2007;357(18):1821-1828.

Study Design

Cross-sectional

Funding

Government

Setting

Population-based

Synopsis

As our imaging technologies improve, we are increasingly faced with the problem of what to do when a patient's test shows an incidental finding. This study provides a baseline, telling us how common various brain findings are in a cross section of the population. Since 2005 the authors have performed a brain MRI on participants in the Rotterdam Study, a prospective cohort study of dementia. Almost all participants in the Rotterdam study agreed to imaging (91%). Participants had a mean age of 63 years (range = 45 years to 96 years) and 52% were women. Incidental findings were common, including: asymptomatic lacunar (5.6%) or cortical (2.0%) infarct; benign tumors (1.6%); aneurysms (1.8%); arachnoid cysts (1.1%); Chiari malformations Type I (0.9%); major vessel stenosis (0.5%); and cavernous angioma (0.4%). Malignancy or metastasis was rare, and was seen in only two patients. Infarcts and meningiomas became more common with age. Although aneurysms were relatively common, 32 of 35 were smaller than 7mm and had a very low risk of rupture.

Clinical question

Do antioxidants prevent the development of early age-related macular degeneration?

Bottom line

Neither high dietary nor supplemental intake of antioxidants reduced the risk of new-onset age-related macular degeneration (AMD). (LOE = 1a)

Reference

Chong EW, Wong TY, Kreis AJ, Simpson JA, Guymer RH. Dietary antioxidants and primary prevention of age-related macular degeneration: systematic review and meta-analysis. *BMJ* 2007; 335(7623):755-763.

Study Design

Meta-analysis (other)

Funding

Other

Setting

Various (meta-analysis)

Synopsis

Two researchers conducting this well-done meta-analysis independently searched seven databases and the gray

literature for randomised controlled trials or prospective cohort studies evaluating the effect of dietary antioxidants or antioxidant supplements in the primary prevention of AMD. The data from the 12 identified studies were independently abstracted by two reviewers and evaluated for quality. The studies were judged to be of moderate quality to high quality using criteria for reporting from the QUORUM statement. The researchers found no heterogeneity among the studies and no evidence of publication bias. Nine studies enrolling 149 203 people evaluated dietary intake of antioxidants such as vitamins A, C, and E, zinc, lutein, zeaxanthin, carotenoids, and lycopene. The incidence of AMD was 1.3% across the mean nine years of follow-up. There was no relationship shown between the intake of any of the antioxidants and the development of early AMD. Three studies of vitamin E, beta-carotene, their combination, or alpha-carotene found no difference in the development of AMD over four to 12 years of study. Supplements containing lutein and lycopene, two antioxidants targeted at AMD prevention, have not been studied, nor has the combination of several antioxidants such as those found in commonly available commercial products.