

RISK OF CANCER AND DEATH IN MIDLIFE ACCORDING TO THE TYPE OF ENDOMETRIOSIS - A FINNISH REGISTER-BASED STUDY

Objectives

The study aimed to assess the risks of cancer and mortality according to the type of endometriosis in women with surgically verified endometriosis.

Methods

A population-based study of women with surgically verified endometriosis (n=49,956) retrieved from the Finnish Hospital Discharge Register 1987-2012: the sub-types of ovarian (n=23,222), peritoneal (n=20,197) and deep infiltrating endometriosis (n=2372) were analyzed separately. The median age of the women was 36.4 years (interquartile range 29.6, 43.3).

Cancers were obtained from the Finnish Cancer Registry. The Finnish female population served as the reference. The outcome measure was the standardized incidence ratio (SIR) with 95% confidence interval (95%CI). The follow-up was 838,685 person-years.

Deaths were obtained from the Statistics Finland. Mortality was assessed referring the entire endometriosis cohort to the age and municipality matched reference cohort (n=98,824) drawn from the Finnish Population Register Centre. The crude overall and cause-specific mortality rate ratios were calculated and the adjusted MRRs (aMRR) by applying multivariable Poisson models with their 95%CI. The mean (\pm SD) length of follow-up was 16.8 (\pm 7.3) years and consisted of 2.5 million person-years.

Results

Altogether 3619 cases of cancer were observed vs. 3695 cases expected. The overall risk of cancer was similar to that of the general female population.

Of the gynecological cancers, endometriosis was associated with an increased risk of ovarian cancer (SIR 1.76 [95%CI 1.47-2.08]). The risk of ovarian cancer was highest among women with ovarian endometriosis, and especially for endometrioid (4.72 [2.75-7.56]) and clear cell (10.1 [5.50-16.9]) ovarian cancer, occurring five to ten years after the index surgery. The SIR for precancerous cervical lesions (0.81 [0.71-0.92]) and for invasive squamous cell cervical cancer (0.46 [0.20-0.91]) was decreased.

The risk of breast cancer was not increased in the entire cohort of endometriosis (0.99 [95% CI 0.94-1.03]), however, increased incidence of breast cancer was observed in young women aged 20-29 years old (4.44 [2.22-7.94]) and decreased incidence in 50-59 years old (0.92 [0.85-0.99]). The risk of carcinoma in situ of the breast was increased (1.25 [1.07-1.44]).

Of the non-gynaecological cancers, increased risk of thyroid cancer was seen in the entire cohort (1.43 [1.23-1.64]) and in the sub-cohorts of ovarian and peritoneal endometriosis. A decreased risk of mouth and pharynx cancer (0.60[0.41-0.80]), and of pancreatic cancer (0.76 [0.58-0.96]) was found. The incidence of basal cell carcinoma was increased in the entire cohort (1.18 [1.10-1.25]) and in the sub-cohorts of ovarian and peritoneal endometriosis.

1656 deaths occurred in the endometriosis and 4291 in the reference cohorts. The risk of death from any cause was decreased (aMRR=0.72 [0.67-0.77]) in endometriosis cohort and the age-adjusted MRR difference remained significant over 26 years of follow-up. The overall cancer mortality was decreased in endometriosis cohort (aMRR 0.71 [0.64-0.78]) as well as mortality due to cardiovascular diseases (aMRR 0.72 [0.59-0.78]), including ischemic heart (aMRR 0.75 [0.57-0.98]) and cerebrovascular diseases (aMRR 0.69 [0.51-0.93]). Decreased mortality was also seen with alcohol related causes and accidental poisoning by alcohol, respiratory diseases, total accidents, diabetes.

Conclusion

Endometriosis was associated with an increased and decreased risks of only few cancers. There were some differences in risks according to the subtypes of endometriosis. The overall mortality was not increased among surgically verified endometriosis in midlife women.