

Weight status and breast cancer incidence in the UK Women's Cohort Study: a survival analysis

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1 Background

➤ Breast cancer is the most common type of cancer in the UK, with 49936 new cases in women during 2011

➤ Research suggests:

Obesity pre-menopause = Protective against breast cancer
Obesity post-menopause = Increases risk of breast cancer



Aim

➤ To investigate the association between body mass index (BMI) and breast cancer incidence in UK women

2 Methods

Data

- The UK Women's Cohort Study (UKWCS) was established in the 1990s to investigate patterns between diet and health
- 35000 women were recruited and followed up via cancer incidence and mortality data reports from the National Health Service Information Centre
- Self-reported height and weight were used to calculate BMI

Analysis

➤ Age-adjusted Cox proportional hazards regression was applied with Stata (version IC12)

Definitions

➤ BMI is defined as:

$$\text{BMI (kg/m}^2\text{)} = \text{weight (kg)/height (m)}^2$$

➤ World Health Organisation cut off points were used to define BMI categories:

Weight status	BMI range
Underweight	<18.5
Normal weight	18.5-24.9
Overweight	25-29.9
Obese	>=30

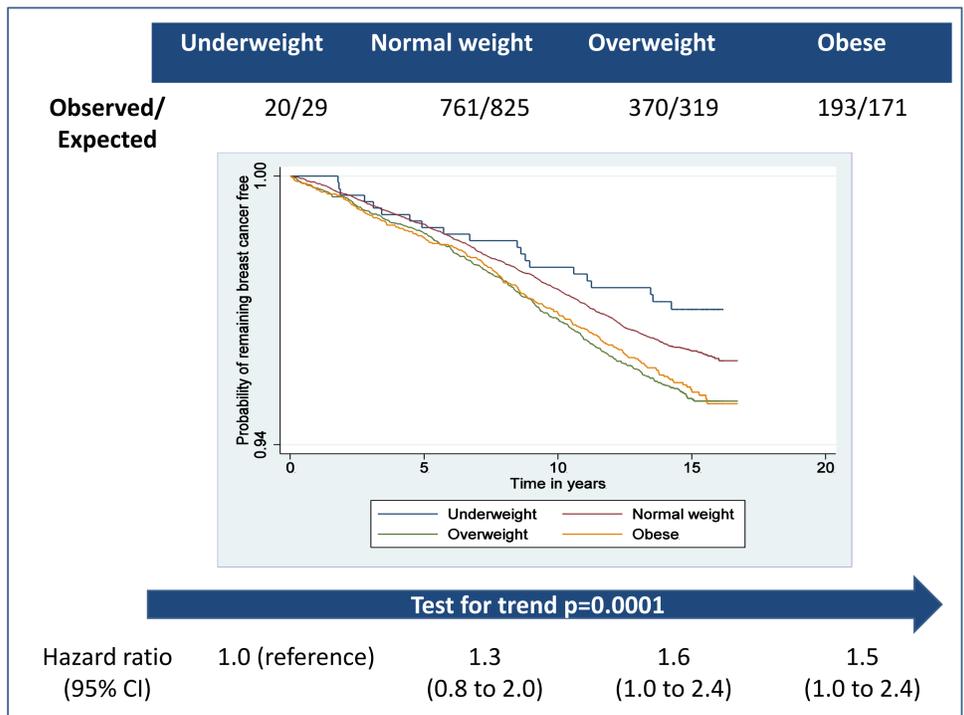
4 Interpretation

- An association exists between BMI and breast cancer incidence in the UKWCS
- The strongest association was seen in postmenopausal women
- No association was observed in premenopausal women
- Results highlight the importance of maintaining a healthy weight in adulthood, especially after the menopause
- Health-care professionals should consider referral of overweight and obese women to weight loss services as a protective measure before menopause

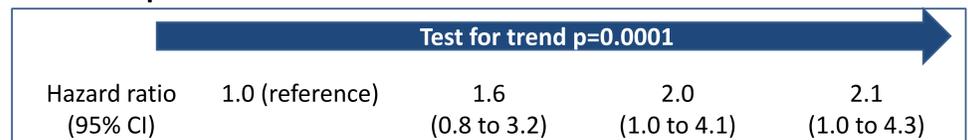
3 Findings

- 1445 (4%) of 35372 women developed breast cancer
- Median time to follow-up was 14.9 years (IQR 1.4)

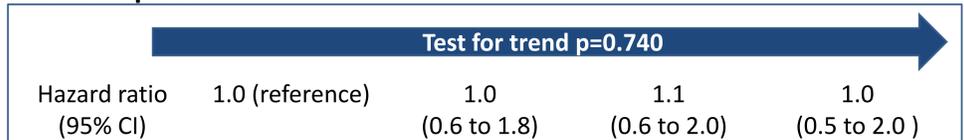
Whole Cohort



Postmenopausal



Premenopausal



- Significant differences exist between the observed and expected outcomes by BMI category (p=0.0003, log rank test)
- Test for trend of survivor functions showed significantly increased risk of breast cancer incidence with increasing BMI category for the whole cohort and for postmenopausal women
- Postmenopausal women who were overweight or obese, compared to underweight, had twice the risk of breast cancer incidence