Joint Aches Cohort Study (JACS): a longitudinal cohort of 578 women diagnosed with primary breast cancer across the south of England and Wales

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Background

Breast cancer affects one in eight UK women [1] and increasing survival rates mean treatment of cancer needs to be focussed not only on survival but also on the management of long-lasting side-effects and their impact on quality of life (QoL) [2].

Postmenopausal women commonly suffer from pain or stiffness in their joints but a large cross-sectional survey, JAPAMs, demonstrated that women with breast cancer had significantly more pain of this type than other women of a similar age, contributing to the knowledge of AI treatment leading to joint pain [2].

Recent literature suggests that women treated with aromatase inhibitors (AI), the most common breast cancer treatment, are more likely to develop joint/muscle aches, pains and stiffness following breast cancer treatment [2,3,4].

These side effects may lead to decreased drug compliance or cessation of treatment despite the known life-lengthening benefits of AI treatment [5].

This cohort was established to examine the natural history and epidemiology of joint aches, pains, and stiffness in women diagnosed with primary breast cancer.

Methods

A cohort of 578 women diagnosed with primary breast cancer were recruited from 15 hospitals across the south of England and Wales.

As some hospitals recruited fewer than 20 patients, they were excluded from the analysis as they significantly reduced the power of the study; a total of 543 women were included in the analyses.

The women completed 5 postal questionnaires: baseline (immediately post surgery), 3 months, 6 months, 9 months, 12 months.

Several validated questionnaires were used: Nordic musculoskeletal questionnaire, Brief Pain Inventory, SF-36, and FACT (G, B, ES).

We report the baseline characteristics of the cohort.

Results

Women ranged in age from 28 - 87 years with a mean of 57 years.

When comparing our cohort to national and regional cancer statistics, as supplied by Public Health England, we oversampled from younger women and also women from the highest IMD quintiles.

64% of women were post-menopausal and 42% of those women report their last menstrual period to be greater than 10 years ago.

Less than 50% of the cohort (n=236) were of a ‘healthy weight’ at baseline (defined as a BMI between 18 and 25).

Just over a quarter of women (28%) were planned to commence AI hormone therapy; 43% were planned to receive tamoxifen and 29% were planned to receive no hormone therapy.

A large number of women (70%) report musculoskeletal pain at baseline, of which 34% can be likely attributed to surgical intervention as the pain was located in the shoulder, chest wall, or underarm.

Twenty-eight percent of the cohort reported joint aches/pains/stiffness at baseline whilst 70% of women report any musculoskeletal pain.

The type of pain reported is as expected for this age group: in the previous twelve months 50% of women report lower back pain, 41% report pain in one or both knees, and 31% report pain in their hips/thighs/buttocks.

Women with baseline musculoskeletal pain had a statistically significant reduction in QoL, using the FACT-B scores, compared to women with no musculoskeletal pain after adjusting for age, fibromyalgia, previous depression, and painkiller use (p=0.0038); time since surgery and surgery type did not have an effect.

Conclusions

The JACS study has established the largest cohort of women to date to examine the natural history of joint aches, pains, and stiffness following primary breast cancer treatment.

Data from this study will enable us to explore the difference between existing musculoskeletal pain and the onset of treatment related arthralgia post breast cancer.

On-going work will explore the impact of arthralgia on function and QoL and compare prevalence and duration of arthralgia in different adjuvant treatment groups.

References