

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

Fenlon, D., Powers, C., Addington-Hall, J.

Faculty of Health Sciences, University of Southampton, UK; corresponding author: dfenlon@soton.ac.uk

## 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 of quality-of-life (QoL)
- 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 (AIs), 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 FACIT (G, B, ES)
- We report the baseline characteristics of the cohort.

Figure 1: Planned breast cancer hormone treatment

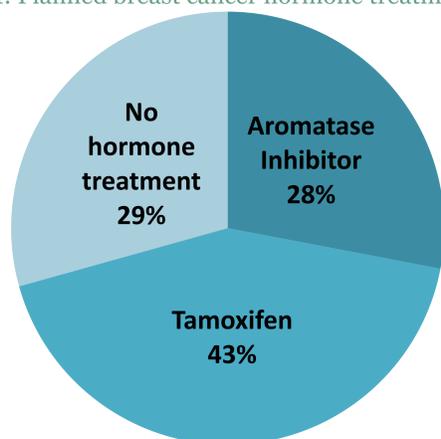
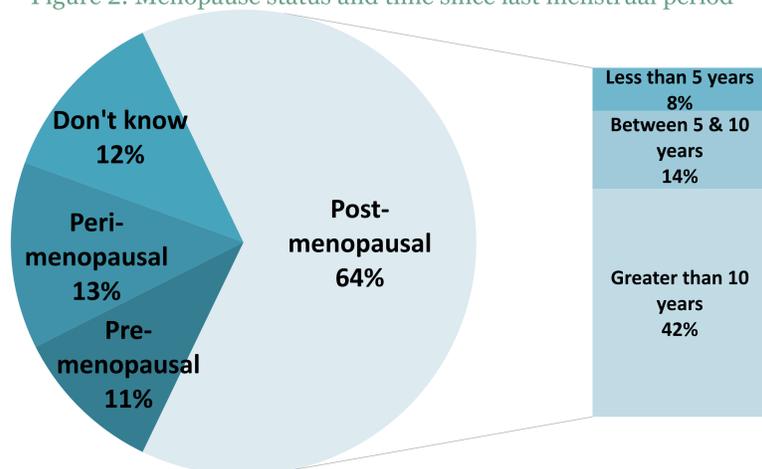


Figure 2: Menopause status and time since last menstrual period



## 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

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