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Obesity in post-menopausal women starting adjuvant aromatase inhibitors for breast cancer: Is there an effect of body mass index on outcome?

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Introduction: Aromatization of androgens accounts for the peripheral formation of significant proportion of estrogen. For this reason, aromatase inhibitors (AIs) including letrozole are standard adjuvant treatments for post-menopausal (PM) women with hormone receptor positive (HR+) breast cancer (BC). Aromatase enzyme activity is predominant in adipose tissue. This has led to speculation that aromatase activity is elevated in obese women and subsequently decreased clinical activity of AIs. In Saudi Arabia, 80% of women with BC are overweight, obese or morbidly obese. Results of international studies investigating the effect of body mass index (BMI) on clinical outcome of women with BC on adjuvant AIs are not conclusive. Certainly, there are no such studies in women from Saudi Arabia.

Patients and Methods: The electronic records of consecutive 320 PM women with HR+BC starting adjuvant letrozole between January 2005 and December 2014 were retrospectively reviewed. Individual patients' data were extracted including: BMI on day of starting letrozole, patients' and tumors' characteristics and disease outcome. The co-primary endpoints are (1) Frequency of obesity in this population (2) Comparing relapse free survival (RFS) in non-obese (Group 1: G1; BMI < 30) and obese (Group 2: G2; BMI ≥ 30) patients.

Results: One hundred patients (31.25%) were not obese (BMI < 35). Obesity (BMI ≥ 30) and morbid obesity (BMI ≥ 35) are present in 105/320 (32.8%) and 115/320 (35.9%) patients respectively. Known poor prognostic factors including larger tumor size, higher tumor grade and number on involved lymph nodes were associated with shorter RFS (Log Rank; P=0.004, 0.037 and <0.0001 respectively). RFS at 5 years (G1: 75% vs. G2: 90%) and at 8 years (G1: 69% vs. G2: 87%). Median RFS was not reached in both groups (Log Rank; P=0.097).

Conclusion: About two thirds of PM women starting adjuvant AIs for BC are classified as obese. In this cohort, obesity did not adversely affect benefit from adjuvant letrozole. Larger cohort is needed to confirm this result.

Biography

Jamal Zekri has received his higher medical oncology training in Weston Park Hospital (Sheffield, England). He practiced as a consultant medical oncologist at Clatterbridge Centre for Oncology (Merseyside, England) until April 2008. Currently, he is an associate professor at Al Faisal University and the head of medical oncology services at King Faisal Specialist Hospital & Research Centre (Jeddah, Saudi Arabia). He has published more than 50 papers in peer reviewed journals and presented more than 30 abstracts in international conferences.

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