Primary hormonal therapy for women diagnosed with breast cancer ≥70

SARTINI-BHREATHNACH Aoife[1] , MURPHY Edward[1] , SMITH Claire[2], KELL Malcolm[1], STOKES M [1], BARRY John Mitchell[1] , WALSH Siún M[1]
[1] Department of Breast Surgery, Mater Misericordiae University Hospital, Eccles St, Dublin 7
[2] Department of Breast Radiology, Mater Misericordiae University Hospital, Eccles St, Dublin 7

Background

Breast cancer is Ireland's most commonly diagnosed cancer in females*. Approximately 36% of breast cancers are diagnosed after the age of 65.The incidence of breast cancer diagnosis in patients over 70 increased by 68% between 1994 and 2015 (372/100,000). There is controversy regarding the optimal management of breast cancer diagnosed after the age of 70, when co-morbidities, polypharmacy and frailty can often limit treatment options. The aim of this study was to examine a modern cohort of Irish women diagnosed with breast cancer aged ≥70 treated with primary endocrine therapy .

Methods

A retrospective review of a prospectively maintained database of all newly diagnosed invasive breast cancers from January 2009 to December 2014 in a single tertiary referral centre was performed. We included all patients aged ≥70 at diagnosis. We then identified all patients who were treated with PET at diagnosis. We excluded patients with a prior history of breast cancer. We analysed patient demographics, tumour characteristics, treatment prescribed and patient outcomes. A chart review was performed to determine whether endocrine treatment was changed or discontinued.

Results

Patient and Tumour Characteristics

483 patients were diagnosed with breast cancer at age ≥70 between January 2009 and December 2014. The mean age was 82.12 years (range 70 – 96). Of these, 162 patients were treated with PET, all female. The mean tumour size at was 27mm (range 1.6-160 mm). The majority of tumours (99%) were ER positive and PR positive (85%). 7(4%) were reported as HER2 positive . 13 had bilateral disease.

Management with Primary Endocrine Treatment.

Co-morbidities represented the main reason for management with PET accounting for 55 (34%), closely followed by patient preference 42 (26%). "Other clinical reasons" accounted for 29 patients (18%) and metastatic disease 14(8%) .The reason for PET was undetermined in 23 patients (14%) . (Fig. 1)

Endocrine Treatment Regime

98(60%) patients were prescribed an aromatase inhibitor (AI) as their initial treatment. AIs prescribed included letrozole 65(40%), anastrazole 25(15%) and exemestane 2(1). Tamoxifen was prescribed to 58(36%) patients. 1(0.6%) patient was commenced on fulvestrant. The hormonal therapy was unspecified for 6(4%). (Table 1)

Change to Primary Endocrine Treatment

53% of patients had no change to their PET during follow-up. There was a change in PET in 28% of patients and 19% had no documentation regarding possible change to therapy. The mean months to change was 20.30 (range 2-66). 9 patients changed from one AI to another, 17 patients changed from tamoxifen to an AI and 10 changed from AI to tamoxifen.

Reason for change of PET

28% of patients had at least one change to PET. The majority (57%) changed their PET due to progression of disease.
Side effects to PET accounted for 23 % of change, skin changes accounted for 10%, no significant response/no regression 4%, patient versus clinician preference of initial therapy 3% and finally there was an episode of drug induced lupus leading to a change in medication for 3% of patients. (Table 2)

Primary Endocrine Therapy	Total (%)	No Change to Therapy (%)	Change to PET (%)	Unknown change (%)
Total	n=162	86(53)	45(28)	32(19)
Tamoxifen	58(36)	32(55)	18(31)	8(14)
Fulvestrant	1(.6)	1(100)	.	.
Unknown	5(3.70)	.	1(2.2)	4(80)
Aromatase Inhibitor (AI)	98(60)	53(54)	26(27)	19(19)
Letrozole	65(40)	32(49)	19(29)	14(22)
Anastrazole	25(15)	16(64)	6(24)	3(12)
Exemestane	2(1)	2(100)	0	.
AI unspecified	6(4)	3(50)	1(17)	2(33)

Table 1: Endocrine Regime

Event	Overall n=162(%)
No change to therapy	86(53)
Change to Initial therapy	45(28)
Unknown	32(19)
Therapy change	n=45
Mean Months to change	20.30 (Range 2-66)
Change AI-AI	9
Change AI-Tamoxifen	10
Change Tamoxifen- AI	17
Change AI/Tamoxifen -Fulvestrant	7
Unknown	2
Further endocrine therapy change	5

Table 2: Change to PET

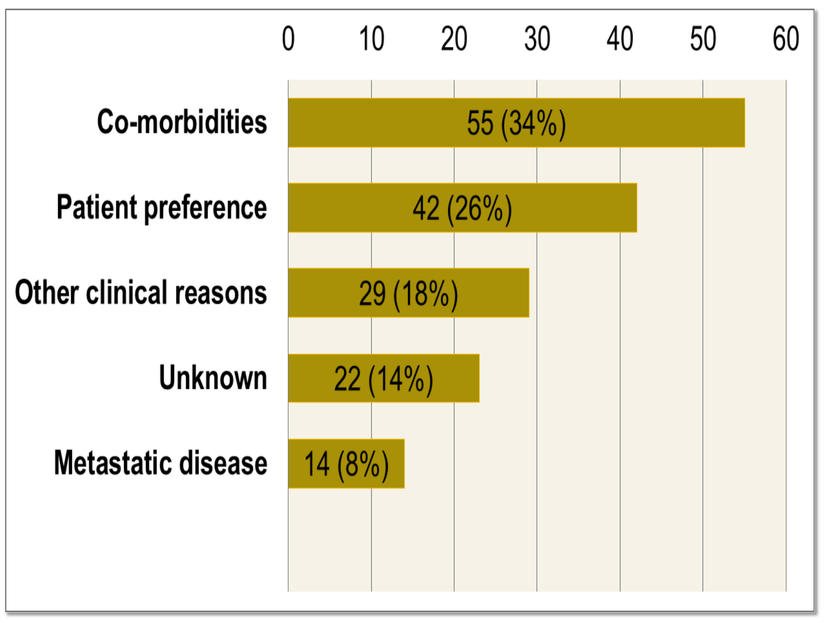

Figure 1: Reasons for Management with PET

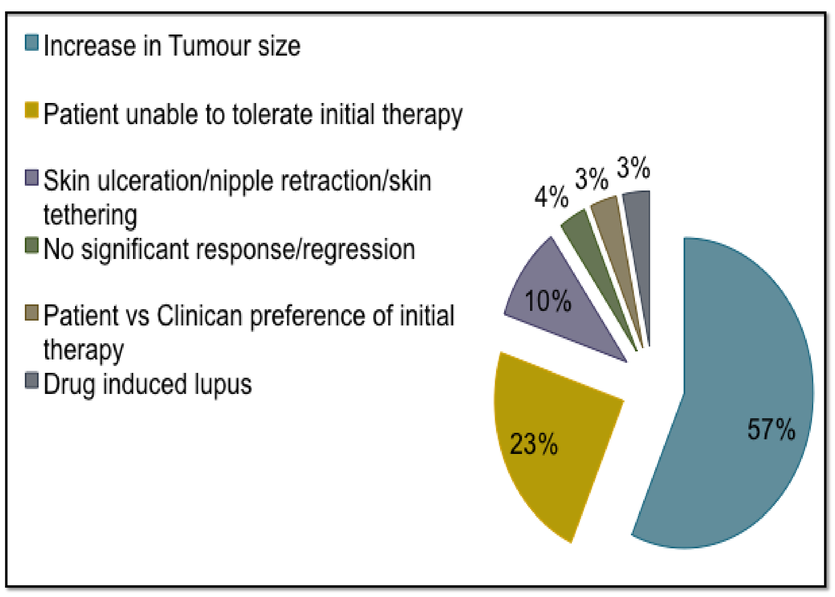

Figure 2: Reason for Change of PET

Surgical Intervention

5 patients (3%) proceeded to have surgery; due to failure of PET. 4 of these were commenced on two endocrine options prior to surgical intervention. There were no 30 day mortalities post op . Patients had a mean time to death of 28 months (range 5-75) from time of surgery.

Outcomes of PET

Patients were followed up for a mean of 40.96 months (range 1 - 122 months). During follow up, 110 (68.5%) of patients died. The mean time to death was 36.12 months (range 1-108). Those who survived were followed for a mean of 50.36 months (range 1 - 122)

Summary

In this retrospective review of women diagnosed at the age of 70 or older with invasive breast cancer in a single centre, we found that 34% were managed with primary hormonal therapy. Of these only 5(3%) proceeded to require surgery, 45(28%) had a change of treatment due to side effects or disease progression. During the duration of our follow up 68% of patients died with a mean time to death of 36.12 months_.

Conclusions

Breast cancer diagnosed at an older age is often treated less aggressively, outcomes are difficult to determine due to inadequate follow-up. In this retrospective study we have demonstrated a low failure rate for PET, with only 3% proceeding to require surgical intervention. Our findings provide a rationale for the use of PET in this cohort of patients, and valuable outcome data. Further research is warranted to advise patient selction and to identify optimal treatment regimens.

Correspondence: siunwalsh@mater.ie