S12. BOTH MODE OF DETECTION AND HORMONE REPLACEMENT THERAPY AFFECT BREAST CANCER CHARACTERISTICS IN POSTMENOPAUSAL WOMEN

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Introduction: Observational studies, linking characteristics of breast cancer with hormone replacement therapy (HRT), have given mixed results. Overall, most report favourable stage and prognostic characteristics, with a predominance of receptor-positive breast cancers. In the "World Health Initiative" randomised trial, breast cancers that occurred among women using combined HRT, did not have such favourable characteristics [2]. The "Million Women Study" confirmed that current use of HRT is associated with an increased risk of invasive breast cancer. This effect is substantially greater for combined HRT [1]. Kerlikowske and colleagues [3] specifically looked at prognostic characteristics of breast cancer among HRT-users in a screened population. This study also demonstrates an increased risk for women using combined HRT for a long duration. The risk was increased both for tumours with favourable and unfavourable prognostic characteristics.

We looked at the effect of HRT on tumour characteristics, and examined whether mode of detection affected this, by comparing tumour characteristics of screen-detected and palpable tumours, both in HRT-users and non-users.

Patients and methods: During one year, from September 2002 onwards, we prospectively collected demographic data in all postmenopausal women who underwent primary surgery for invasive breast cancer (N=362). Exclusion criteria were "ever-use" of HRT (>1 year before diagnosis, N=31) and bilateral breast cancer (N=4). For this analysis, 327 women were eligible, of whom 42.8% were using HRT. We looked at the effect of HRT and compared mean values for age, mode of detection, histological type, size, grade, Nottingham Prognostic Index (NPI), nodal and receptor status.

Results: We looked at the two subgroups: HRT-users (N=144) *versus* non-users (N=183), to evaluate the effect of HRT use on tumour characteristics.

HRT-users were significantly younger when diagnosed with breast cancer (58.8 *versus* 67.3 years, P<0.001), had more screen-detected cancers (56.3% *versus* 38.8%, P=0.002) and a lower NPI (3.86 *versus* 4.33, P=0.001). HRT-users had significantly more grade I tumours (23.8% *versus* 11.5%), and less grade III tumours (28.7% *versus* 45.6%, P=0.001).

There was no significant difference in the percentage of invasive lobular carcinoma (±14%, P=0.923), size of the lesions (25.28 *versus* 27.36 mm, P=0.382), nodal status (25% *versus* 32.2%, P=0.177) or receptor status.

To *evaluate the effect of HRT*, we looked at the two subgroups, palpable *versus* screen-detected tumours, and stratified for HRT use.

In the subgroup of palpable tumours (N=175; HRT-users, N=63), we found that HRT-users were younger (59.3 *versus* 69.8 years, P<0.001), had a lower NPI 4.23 *versus* 4.76, P=0.006) and more grade I (22.2% *versus* 5.4%) and less grade III lesions (38.1% *versus* 56.3%, P=0.002), but had tumours with the same size (28.98 *versus* 33.01 mm, P=0.474) and had the same nodal status (36.5% N positive *versus* 43.8%, P=0.424).

In the subgroup of screen-detected tumours (N=152; HRT-users, N=81), we found that HRT-users were younger (58.1 *versus* 62.9 years, P<0.001), but the tumours had the same size (22.45 *versus* 18.46 mm, P=0.261), NPI (3.58 *versus* 3.63, P=0.775), grade (25.0% *versus* 21.4% grade I, 53.8% *versus* 50.0% grade II, 21.3% *versus* 28.6% grade III, P=0.572) and nodal status (16% N positive *versus* 14.1%, P=0.822).

To *evaluate the effect of screening*, we looked at the two subgroups, HRT-users *versus* never-users of HRT, and stratified for mode of detection. In the subgroup of HRT users (N=144), we found that screen-detected breast cancers (N=81) had a lower NPI (3.58 *versus* 4.23, P=0.004) and less positive lymph nodes (16% *versus* 36.5%, P=0.006), but the tumours had the same size (22.45 *versus* 28.98 mm, P=0.104), grade (25.0% *versus* 22.2% grade I, 53.8% *versus* 39.7% grade II, 21.3% *versus* 38.1% grade III, P=0.079) and they were diagnosed at the same age (58.1 *versus* 59.3 years, P=0.320).

In the subgroup of non-users (N=183), we found that screen-detected breast cancers (N=71) were smaller (18.46 *versus* 33.01 mm, P<0.001), had a lower NPI (3.63 *versus* 4.76, P<0.001) and that patients were younger (62.9 *versus* 69.8 years, P<0.001), had more grade I (21.4% *versus* 5.4%), less grade III lesions (28.6% *versus* 56.3%, P<0.001) and less lymph node-positive tumours (14.1% *versus* 43.8%, P<0.001).

Conclusions: HRT-users are younger when diagnosed with an invasive breast cancer, and the lesion is more likely to be screen-detected, with a lower NPI and grade. The effect of HRT is most obvious for breast cancers detected by self-examination: only the palpable, but not the screen-detected breast cancers have better prognostic tumour characteristics in HRT-users. Mode of detection may explain inconsistencies in the literature regarding the effect of HRT on tumour characteristics of operable breast cancers and is an important variable to be taken into account.

References

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