Targeted Radiotherapy for early breast cancer

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We congratulate the IMPORT Low[1] trialists on another randomised trial ratifying partial breast irradiation (PBI) and confirming the original hypothesis[2,3] proposed in the Lancet 20 years ago[4]. In 2010, the commentary[5] accompanying the first results of the TARGIT-A trial[6] of single-dose targeted intraoperative radiotherapy (TARGIT-IORT) presented PBI as the new standard for suitable patients. 5-year results of TARGIT-A[7] were confirmed[8] in the GEC-ESTRO brachytherapy trial. The IMPORT-Low trial re-confirms randomised external-beam data from Florence[9], widening the spectrum of therapeutic approaches. The small survival benefit first reported in TARGIT-A (5-year overall mortality: TARGIT 3.9%, EBRT 5.3%)[7,10], is interestingly similar (PBI 3.7%, WBI 5.0 %) and strengthens (figure 1) our meta-analysis.[11]

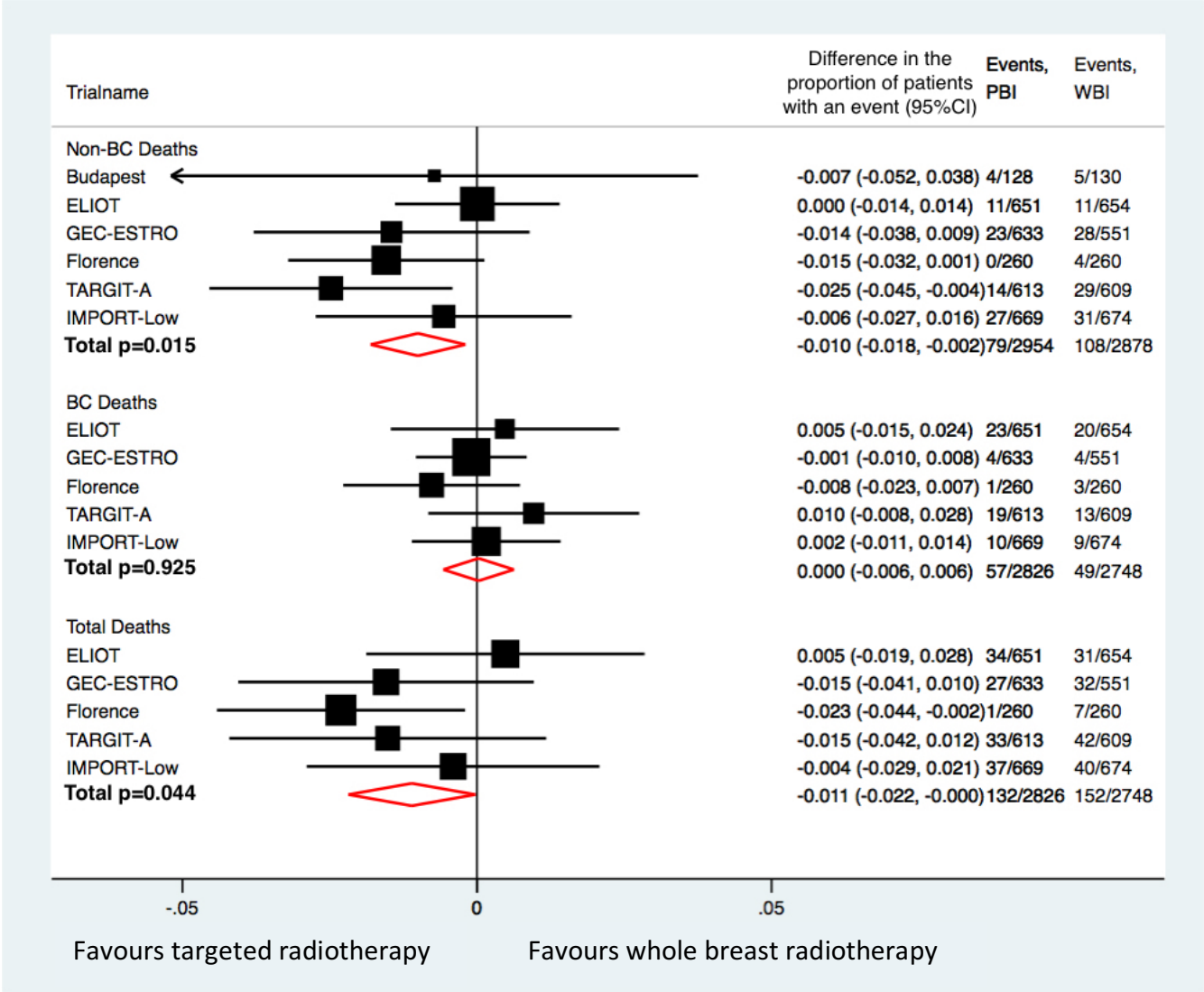

Figure 1 Meta-analysis of mortality in 6 randomised trials of targeted radiotherapy

Forest plots representing meta-analysis of nearly 6000 patients in randomised trials of partial breast irradiation (PBI) showing the difference in mortality between partial-breast irradiation and whole-breast irradiation (WBI). The trials included were the Budapest[1], TARGIT-A[2], ELIOT[3], Florence[4], GEC-ESTRO[5] and IMPORT-LOW[6]. The median follow-up of all these trials was 5 to 6 years. Data from only the initial 1222 patients in the TARGIT-A trial, whose median follow-up was 5 years, are included. Breast cancer (BC) deaths or total deaths were not available for the Budapest trial.

There was no significant heterogeneity: p= 0.546 for breast cancer, p=.447 for non-breast cancer (Non- BC) and p=.448 for total deaths, with Higgins I^2 values 0.0% for each. Breast cancer mortality was not significantly different (p=0.925).

Compared with whole breast radiotherapy, targeted radiotherapy resulted in a significant reduction in non-breast cancer mortality by 1% (p=0.015) and overall mortality by 1.1% (p=0.044).

IMPORT-Low still requires 3-weeks' daily commute for radiotherapy, with its adverse physical, social and environmental impacts[12]. They report significant benefit in only two of the 72 patient-reported quality of life domains, and in contrast with TARGIT-A and GEC-ESTRO, no reduction in clinician-assessed radiotherapy toxicity. Although utilising existing machines, its greater complexity considerably increases the demand on radiotherapy departments, and costs to the taxpayer - medical and departmental charges for IMRT – can be much higher. TARGIT-IORT is much more convenient for patients, less toxic, and incurs a lower overall cost to health systems such as the NHS[6,7,10,12-17]. Patients clearly recognise these benefits that enable such a rapid return to normal life: over 20,000 have chosen TARGIT-IORT, in over 300 centres worldwide[15].

The oncologic safety of targeted radiotherapy for early breast cancer is now well established. The choice between various modalities based on toxicity, cost, and personal convenience should rest with the patient.

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