

July 9 2014

Hong Kong Breast Cancer Foundation “Updates on Breast Cancer Management” Symposium

Summary of “Radiotherapy or not in patients with 1 – 3 positive axillary nodes”, presented by Dr. Kwan Wing-hong, Director, Department of Radiotherapy, Hong Kong Sanatorium and Hospital

The Early Breast Cancer Trialists’ Collaborative Group (EBCTCG) carried out a meta-analysis of data of individual patients treated between 1964 and 1986, which examined how radiotherapy affected the outcomes of patients treated with mastectomy and axillary surgery at stages I and II diseases. The data were gathered from 22 randomized trials that involved 8,135 women.

The findings showed that radiotherapy covering the chest wall, supraclavicular and/or axillary fossa and internal mammary chain would reduce loco-regional recurrence and overall recurrence over a 10-year period, as well as breast cancer mortality and overall mortality over 20 years among all node positive women. However, the results may vary in other more recent studies since the EBCTCG analysis took place before neoadjuvant chemotherapy became a common practice, and when sentinel node biopsy and taxane, trastuzumab and aromatase inhibitors were absent. Neither were radiation planning, treatment delivery and quality assurance as advanced as today.

Two trials were conducted to further analyze the results of the EBCTCG study. One is the MA 20 Canadian trial, which studied 1,832 high-risk node negative and node positive women who received breast-conserving treatment (BCT). The subjects were randomly treated with whole breast radiation (WBI) and regional radiotherapy (internal mammary + medial supraclavicular), or WBI alone. Assessment after 62 months (median) showed significant differences in local recurrence (LR), disease-free survival (DFS) (96.8% vs. 94.5%, $p=0.02$), distant DFS (92.4% vs. 87%, $p=0.002$), overall DFS (89.7% vs. 84%, $p=0.003$), and overall survival (92.3% vs. 90.7%, $p=0.07$). Similar results were found in the EORTC-22922 trial, which investigated 4,004 node positive women who were treated with breast-conserving treatment (BCT) (76%) or mastectomy (24%) undergoing WBI and radiotherapy of medial supraclavicular and internal mammary lymph nodes (MS-IM-RT), or with WBI alone. The study showed a significant reduction in DFS (HR=0.89, $p=0.04$) and in survival (HR=0.87, $p=0.056$).

Several risk factors increased the probability of loco-regional recurrence. These included: a larger tumour, presence of lymphovascular permeation or three positive nodes, age (less than 40), presence of gross extracapsular extension or skin or nipple invasion, Bloom and Richardson grade 3, inadequate axillary node dissection, the diagnosis of triple negative disease, and the size of lymph node metastases.

Since medical oncology is advancing rapidly with time and many variances of pathologic risk factors can influence the effect of radiotherapy, trials should be conducted on an ongoing basis to provide the most up-to-date evidence as references.

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References:

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