Radiation Therapy May Be Unnecessary for Postmenopausal Patients with Early Stage Breast Cancer after Conservative Surgery

Abstract: Breast conservative surgery with and without radiotherapy in patients aged 55-75 with early stage breast cancer: A prospective randomized multi-center trial analysis after 108 months of medium follow-up

May 2, 2013, Chicago--Postmenopausal women aged 55 to 75 with early stage breast cancer can be safely treated with breast conservative surgery without post-operative radiation therapy, according to a double arm, prospective, randomized study presented this week at the American Society of Breast Surgeons (ASBrS) Annual Meeting. The study found no statistically significant difference in the risk of local recurrence and overall survival between the two treatment groups.

The authors note that breast conserving surgery accompanied by post-surgical radiation of the breast is the generally accepted choice for treatment of women with early stage breast cancer. “We may be over-treating almost half of these patients,” says primary study author Corrado Tinterri, M.D., Humanitas Cancer Center in Milan. He notes that select patients may be spared the potential side effects, poorer cosmetic results, direct and indirect costs and inconvenience associated with breast radiation. The elimination of follow up radiation represents a major change in current breast cancer treatment protocols.

The study followed 749 patients treated in 11 medical centers across Italy for a median of nine years. Women studied ranged in age from 55 to 75 and had a tumor size of 2.5 cm or less without an extensive intraductal component and without peri-tumoral vascular invasion. They were randomly assigned to either a group treated with surgery alone or surgery accompanied by post-operative breast irradiation (50 Gy + 10 Gy boost). Tumor characteristics were well-balanced across the groups.

“Breast irradiation might be associated with undesirable side effects. Costs are significant not only to the medical system but also to the radiotherapy patient who is unable to return to work or an active
lifestyle as quickly as patients not receiving the treatments,” he comments. Furthermore, “Women who receive radiation along with surgical resection may be unable to have satisfactory breast reconstruction if the tumor recurs and they are subsequently treated with mastectomy (complete breast removal). In addition, many patients in rural or other isolated areas where radiotherapy is not available or who are unable to schedule lengthy radiation treatments receive a mastectomy instead of conservative surgery. This is because mastectomy generally is not accompanied by radiation.”

Noting that the findings of the study are extremely significant, Dr. Tinterri stresses that they involve a specific group of patients meeting strict biological criteria. “Age was an extremely important factor in the study’s findings. Prior research found that younger women did not respond as well without radiation therapy,” he says. “Also women with small and non-aggressive tumors respond well to treatment without radiation. These are women who do not have intraductal involvement, that is, who do not have a significant number of atypical cells that extend into the milk ducts surrounding the tumor. They are also patients whose tumor has not spread into blood and lymphatic vessels around the tumor.” For these patients, he says, the findings are extremely promising.

In the study, (last analysis 31.12.2012) at a median follow-up of 108 months, 3.4% (12) of the group receiving radiation therapy experienced a breast cancer recurrence (7 in the index quadrant and 5 in the other quadrant), and 4.4 % in the group without radiation therapy. There was no statistically significant difference in the risk of local recurrence and death in the two treatment group.

“The fact that the patients studied came from 11 medical facilities in different geographic regions of the country is also significant,” adds Dr. Tinterri. “This suggests that specific methods of surgery employed in a particular center and patient lifestyle variances do not account for the findings. Additionally, the randomized, prospective format of the study also makes the findings extremely reliable.”
Abstract

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Title: Breast conservative surgery with and without radiotherapy in patients aged 55-75 with early stage breast cancer: A prospective randomised multi-centre trial analysis after 90 months of medium follow-up

Aims and objectives: Breast conserving therapy (BCT) including postoperative irradiation of the remaining breast tissue (WBI) is generally accepted as the treatment of choice for the vast majority of patients with early stage breast cancer, resulting in advantages of improved cosmetics and quality of life (QOL) as compared to mastectomy (MX). The question whether post operative WBI is mandatory in all patients and, herewith, overtreating almost a half of them, remains one of the most controversial issues in BCT. To properly answer this question a randomised prospective multi-centre study was launched in January 2001 based on long-term follow-up data of the Milan III trial comparing BCT with or without postoperative WBI. Those data demonstrated a significant lower risk of local recurrence in patients older than 55 years in comparison to the younger age group. Moreover, in patients older than 65 years the risk of local recurrence was similar in the irradiated and the control group. The main aim of the presented study was to assess the cumulative incidence of local recurrence after conservative surgery with (Arm 1) vs without breast irradiation (Arm 2). Added values of the study were to avoid the inconvenience and the risk of side-effects of radiation therapy and to prevent unnecessary mastectomies in hospitals where the facilities for radiation treatment are not available.

Patients and Methods: From January 2001 until December 2005 in total 749 patients from 11 centres in Italy were randomly assigned to Arm 1 (373 pts) BCT + WBI (50 Gy +10 Gy boost) or Arm 2 (376 pts) BCT alone. Main patients and tumours characteristics were fairly well balanced between treatment groups. Adjuvant systemic therapy in patients at moderate-high risk of distant recurrence were allowed as per participating centre policy.

Results: At a median follow-up of 7.5 yrs the cumulative incidence of local relapse was 1.8% (0.8% in the index quadrant and 1.0 % other quadrants) in arm 1 and 2.9% (1.6% in the index quadrant and 1.3% in other quadrants) in arm 2, respectively. Contra lateral tumours were observed in 1.2 % in arm 1 and in 0.9 % in arm 2, respectively. OAS was 95% in arm 1 and 96 % in arm 2. Distant disease-free survival was 96% and 96.5%, respectively. The interim analysis failed to reveal a statistically significant difference in the risk of local recurrence and death in the two treatment group. Local-regional treatment was well tolerated and devoid of major side effects.

Conclusions: These data are promising and suggest that WBI after BCT can be avoided in patients aged 55-75 years without exposing them to an increased risk of local recurrence and death. For this selected patient population longer follow-up is needed to further consolidate these results.