

# Treating chest lymph nodes in early breast cancer patients improves survival

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Giving radiation therapy to the lymph nodes located behind the breast bone and above the collar bone to patients with early breast cancer improves overall survival without increasing side effects. This new finding ends the uncertainty about whether the beneficial effect of radiation therapy in such patients was simply the result of irradiation of the breast area, or whether it treated cancer cells in the local lymph nodes as well, the 2013 European Cancer Congress (ECC2013) [1] will hear on Saturday.

Dr Philip Poortmans, a [radiation oncologist](#) from the Institute Verbeeten, Tilburg, The Netherlands, and a member of the EORTC Radiation Oncology and Breast Cancer Groups, said that results from the international [randomised trial](#), which involved 4004 patients from 43 centres, were convincing. "Our results make it clear that irradiating these lymph nodes give a better patient outcome than giving [radiation therapy](#) to the breast/thoracic wall alone. Not only have we shown that such treatment has a beneficial effect on locoregional disease control, but it also improves distant metastasis-free survival and overall survival," he told an ECC2013 news briefing on Friday.

Lymphatic drainage from breast cancer means that the cancer is more likely to spread to other parts of the body. It normally follows two pathways. The best known is to the axilla (armpit), and these lymph nodes are usually treated by surgery and/or radiation therapy. The second pathway drains to the internal mammary (IM) lymph nodes behind the [breast bone](#), and also to those just above the [collar bone](#), the medial

supraclavicular (MS) nodes. Because of uncertainty about the effects of treatment in this area, and particularly concerns about the increased toxicity that might be due to the irradiation of a larger area, many centres do not currently treat the IM-MS lymph nodes.

After an average follow-up of 10.9 years, the researchers found that patients in the IM-MS treatment group had better overall survival independent of the number of lymph nodes involved. A total of 382 patients in the IM-MS group died during that period, compared with 429 in the non IM-MS group, and there was no increase in non-breast cancer related mortality in the first group. To date, there have been no serious complications related to the treatment.

The researchers believe that the [beneficial effect](#) of IM-MS radiation can be explained by the ability of the treatment to eradicate microscopic tumour deposits in the lymph nodes. "With this treatment, we can stop the development of metastases at their source," said Dr Poortmans. "Interestingly, this effect is irrespective of the stage of the tumour. We believe that this is likely to be related to the positive interaction of the IM-MS treatment with systemic treatment—chemotherapy, hormonal therapy and targeted treatment."

Patients at low risk of their cancer spreading outside the breast will often be given less intensive systemic therapy in order to spare them side effects. In these cases, using IM-MS radiation therapy can improve their outcome by eradicating residual tumour cells in the breast/thoracic wall. For patients at high risk of metastases, who receive systemic therapy, the prospect of cure is also related to the chance of leaving residual tumour cells behind throughout the body. In these cases too, the ultimate outcome can be improved by using effective locoregional treatment to eradicate disease at the site where it is most likely to be present, the researchers say.

"The results of our trial, in which the patients received appropriate systemic treatments, contradict the existence of a 'competition' between locoregional and systemic treatments," said Dr Poortmans. "Because there is an interaction between these treatments, in many patients their combination will result in an enhancement of the combined benefits; in other words, one plus one can equal more than two."

The researchers intend to follow up these patients in the long term and are planning an average follow-up of 20 years, with the next analysis at 15 years.

"It is of the utmost importance that we record all possible events, including recurrence and toxicity, and such follow-up will also give us the opportunity to continue evaluating our patients in other areas, for example quality of life and wellbeing," said Dr Poortmans. "But we believe that our trial has already given solid evidence of the benefits of radiation treatment of the IM-MS [lymph nodes](#), and we hope that such treatment will become standard clinical practice for patients with early breast cancer."

Professor Cornelis van de Velde, President of ECCO, said: "In past studies, radiotherapy as an adjunct to surgery has shown important improvements in locoregional control as well as survival, and these further survival benefits without an increase in short and long-term toxicities are a valuable development. The results of this study will help us on the road to the development of yet more personalised treatments, in which we have to find the delicate balance between under-treatment resulting in an increased risk of disease recurrence, and over-treatment accompanied by unnecessary toxicity, in order to provide optimal care for [breast cancer patients](#)."

**More information:** [1] The 2013 European Cancer Congress is the 17th congress of the European Cancer Organisation (ECCO), the 38th

congress of the European Society for Medical Oncology (ESMO) and the 32nd congress of European Society for Therapeutic Radiology and Oncology (ESTRO).

[2] The research was supported by the US National Cancer Institute (grants number 2U10 CA11488-22 through 5U10 CA011488-38).

Abstract no: BA 2, "Irradiation of the internal mammary and medial spraclavicular lymph nodes in stage I to III breast cancer: 10 years results of the EORTC Radiation Oncology and Breast Cancer Groups phase III trial 22922/10925". Presidential session I, 13.45 hrs CEST, Saturday 28 September, Hall 7.1.

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