

Brachytherapy improves survival for inoperable early stage endometrial cancer

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Women who have early stage endometrial cancer and are inoperable tend to live longer if they have been treated with brachytherapy with or without external beam radiation, according to new research to be presented at the 3rd ESTRO Forum in Barcelona, Spain, on Sunday.

Brachytherapy is a type of internal radiotherapy that involves putting a radioactive source close to, or in the tumour. Although it has been used historically to treat inoperable endometrial cancer, there are no guidelines based on randomised evidence to support this approach. Dr Sahaja Acharya will tell the conference: "To our knowledge, this is the first population-based study to compare outcomes for patients who received [brachytherapy](#), with or without external [beam radiation](#), to those who did not receive brachytherapy and were treated with external beam radiation alone."

Dr Acharya, a resident physician in the Radiation Oncology Department of Washington University in Saint Louis, USA, and her colleagues analysed data from the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) for 460 [women](#) in the USA who had been treated with [radiation therapy](#) between 1998 and 2011 for inoperable stage 1 endometrial cancer.

Usually, [early stage](#) endometrial cancer can be removed surgically and has a good prognosis. However, sometimes it is inoperable and this can be for a number of reasons, including if the patient has a number of other medical problems that would make an operation risky or if they are very overweight or obese. In these cases radiotherapy is the only remaining [treatment](#) option and the average survival time is around three years.

Of the 460 women, 260 (56.5%) had been treated with external beam radiation alone, and 200 (43.5%) with brachytherapy, with or without external beam radiation. Younger women were

more likely to receive brachytherapy.

The researchers found that brachytherapy was associated with a better overall survival: death from any cause was 13% lower, with 60% of women who had been treated with brachytherapy alive three years after treatment compared to 47% of women who had been treated with external beam radiation alone. They then matched women who received brachytherapy to those who did not receive brachytherapy based on age, grade and year of diagnosis. After adjusting for these factors, they found that the survival benefit persisted in favour of those who received brachytherapy.

In addition, deaths from endometrial cancer were lower after three years among the women treated with brachytherapy; 18% of women treated with brachytherapy died from their malignant disease compared to 26% of women who had not received brachytherapy.

The median survival for all the women was 40 months. "These patients have many other medical problems and not only die from endometrial cancer, but also from causes other than cancer, such as cardiovascular disease," Dr Acharya will say.

She will continue: "These findings show that brachytherapy is associated independently with an improved overall survival three years after diagnosis for women with inoperable stage 1 endometrial cancer. All these patients should be considered for brachytherapy and it should be administered when feasible."

She points out that, as this was a population-based analysis, it shows there is an association between treatment with brachytherapy and better survival, but the study cannot show that brachytherapy is the cause of the better survival when compared with external beam radiation alone. Proof of causation would require a randomised controlled trial.

She will end by highlighting some of the drawbacks of using SEER data. "It is also important to recognise the limitations of using the SEER data. Although the SEER registry represents 28% of the US population, treatment information on radiation dose, radiation treatment volume, brachytherapy technique and [external beam radiation](#) technique is not available. There is also no information on treatment-related toxicity. Therefore, one cannot draw conclusions on the efficacy or toxicity of particular radiation doses," she will conclude.

Professor Philip Poortmans, President of ESTRO, commented: "In our ageing population, we are confronted progressively more often with patients who have a malignant disease but who are unfit for receiving the most appropriate medical treatment. However, often we have valuable alternatives, like radiation therapy instead of surgery for patients with endometrial [cancer](#). This study highlights the importance of selecting the most effective treatment, even when the burden might seem higher compared to, at first sight, a more gentle approach. In the case of patients with early stage [endometrial cancer](#) who cannot be operated on, brachytherapy should be part of the treatment approach, providing, of course, that this is technically feasible."

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