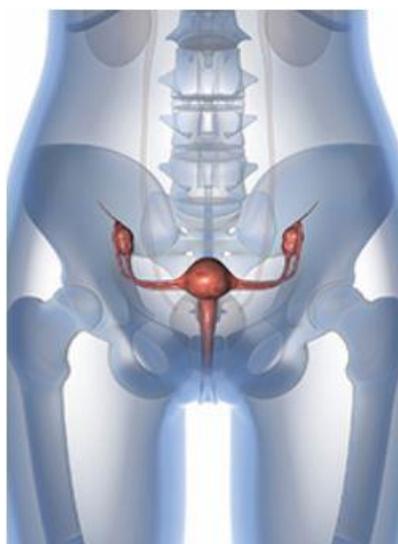




Robotic Radiosurgery May Provide New Option for Recurrent Gynecologic Cancers

By Jason Harris



The administration of stereotactic body radiation therapy (SBRT) through the use of CyberKnife therapy appears to be a safe and effective salvage treatment for women with previously irradiated, locally recurrent gynecologic cancers, according to study results presented at the 2018 Society of Gynecologic Oncology (SGO) Annual Winter Meeting.¹

Findings from a retrospective analysis of patients treated with CyberKnife therapy for recurrent gynecologic malignancies at NYU Winthrop Hospital in Mineola, New York, over a 10-year period demonstrated a median progression-free survival (PFS) of 11.7 months and a median overall survival (OS) of 20.5 months, with a median time to progression of 11.7 months (95% CI, 8.8-22.4). There were few serious adverse events.

“The use of CyberKnife for locally recurring gynecologic malignancies in a prior radiated field can be an alternative nonsurgical salvage option providing additional local control,” said Courtney Griffiths, DO, an obstetrician and gynecologist at NYU Winthrop, during a presentation at SGO.

Griffiths said 20% to 40% of patients who receive conventional radiation therapy (RT) for gynecologic cancers will experience locoregional relapse. These patients have a poor prognosis and few treatment options. Reirradiation using conventional techniques can lead to morbidity and damage to the surrounding tissue.

For those with central pelvic recurrences, pelvic exenteration is curative in up to

50% of selected patients, Griffiths said. She said study findings have indicated that mortality from this aggressive surgery has fallen from rates as high as 30% to 10% or less, but that the morbidity associated with the procedure remains high at 13% to 65%.² Chemotherapy is considered only for patients who are not candidates for radical surgery.

The rationale for studying the impact of SBRT in gynecologic malignancies stems from research establishing its effectiveness in prostate and colorectal cancers, Griffiths said. She cited several studies whose findings show high rates of disease-free survival and PFS with no grade ≥ 4 toxicities in patients with recurrent prostate cancer treated with SBRT. Similar responses were seen in a small study of patients with pelvic recurrences from colorectal cancer.

To determine if CyberKnife, could deliver similar results in patients with gynecologic cancers, Griffiths and colleagues analyzed data from all patients treated with CyberKnife at NYU Winthrop Hospital from 2005 to 2015. The hospital says it was the first medical institution in the New York metropolitan region to offer CyberKnife radiosurgery, which uses image-guided robotic technology to target RT delivery.

They identified 29 patients who had undergone prior RT and had been diagnosed with radiologically confirmed, locally recurrent gynecologic cancer in the central pelvis, pelvic side wall, or para-aortic lymph nodes.

Most patients were treated for endometrial cancers ($n = 22$), followed by vulvar ($n = 4$), ovarian/primary peritoneal ($n = 2$), and cervical ($n = 1$) cancers. The median age of the patient population was 66 years and the median body mass index (BMI) was 30. Twenty-five patients had ECOG performance status scores of 0 or 1.

The analysis consisted of data from 27 patients, with a median follow-up of 13.7 months. These patients had received a median dose of 60 Gy as primary RT and 25 Gy of CyberKnife therapy for recurrence. The median time between primary RT and CyberKnife treatment was 24 months. There were 17 recurrences in the central pelvis, 9 in the para-aortic region, and 4 in the pelvic side wall.

At 12 months, the median overall response rate was 85%. Griffiths said researchers observed only 6 in-field progressions. Gross tumor volume was a negative prognostic factor for both PFS (hazard ratio [HR], 1.01; 95% CI, 1.0-1.01; $P = .017$) and OS (HR, 1.01; 95% CI, 1.0-1.02; $P = .008$). Similarly, age

was a negative prognostic factor for PFS (HR, 1.06; 95% CI, 1.01-1.1; $P = .012$) and OS (HR, 1.08; 95% CI, 1.03-1.14; $P = .004$). There was a slight protective effect associated with BMI for PFS (HR, 0.9; 95% CI, 0.81-0.99; $P = .035$).

All patients completed the prescribed CyberKnife dose. Griffiths said the treatment was well tolerated, with only 3 incidences of grade 3/4 toxicities: 2 patients developed small bowel obstruction and 1 experienced rectovaginal fistula.

Griffiths said the study has several strengths, including that it was conducted in a well-defined group of similar size as that of the populations of other SBRT studies. Nevertheless, she said it had several weaknesses, including its retrospective nature, a selection bias in the population, and the relatively small size of the cohort.

She said future research options involving the use of CyberKnife therapy in gynecologic malignancies include comparing response rates with those in other cancers, analyzing quality of life, and studying the efficacy of primary RT with a CyberKnife therapy boost for recurrences.