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New study finds interruption of radiation therapy risks cancer recurrence

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Cancer patients who miss two or more radiation therapy sessions have a worse outcome than fully compliant patients, investigators at Montefiore Einstein Center for Cancer Care (MECCC) and Albert Einstein College of Medicine's NCI-designated Albert Einstein Cancer Center have found. The study, published in the *International Journal of Radiation Oncology Biology Physics*, suggests that this noncompliance to scheduled treatments may represent a new behavioral biomarker for identifying high-risk patients who require additional interventions to achieve optimal care outcomes.

The study evaluated 1,227 patients scheduled for courses of external beam radiation therapy for cancers of the head and neck, breast, lung, cervix uterus or rectum from 2007 to 2012. Two hundred twenty six of these patients (22 percent) were noncompliant (i.e., they missed two or more scheduled radiation therapy appointments). All patients eventually completed the radiation therapy course planned for them.

The radiation therapy course for noncompliant patients was prolonged for an average of one week compared with compliant patients. Nevertheless, 16 percent of noncompliant patients later experienced a recurrence of their cancers versus only a 7 percent recurrence rate for compliant patients.

"This study shows that the health of our patients can improve only when a course of treatment is completed in the prescribed period of time," said Madhur Garg, M.D., clinical director, Department of Radiation

Oncology, MECCC and professor of clinical radiation oncology at Einstein. "These findings should serve as a wakeup call to physicians, patients and their caregivers about the critical need to adhere to a recommended treatment schedule."

Prolonging radiation therapy for head and neck cancer or cervical cancer impacted tumor control and overall survival at the greatest rate, at one percent per day, however this negative impact was seen in all cancers studied. This is attributed to tumor repopulation, which can accelerate after treatment initiation.

"We previously conducted a study that demonstrated a statistically significant relationship between lower socioeconomic status and non-compliance," said Nitin Ohri, M.D., attending physician, MECCC and assistant professor of radiation oncology at Einstein. "A Multivariable Cox proportional hazard model was informed by this prior study and helped us adjust for demographic variables like age, race, ethnicity and socioeconomic status."

As an outcome result of this study, management of mood disorders, patient navigator programs and increasing assistance with transportation are being evaluated at Montefiore as interventions that might improve patient care outcomes and close disparities among vulnerable populations.

Provided by Albert Einstein College of Medicine