Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Evaluation of Psychiatric Diagnoses as a Source of Bias in Prognostication and Decision-Making for Palliative Radiotherapy

A.W. LaVigne,[1] J. Fiksel,[2] J.L. Wright,[1] T.R. McNutt,[1] L.R. Kleinberg,[1] K.J. Redmond,[1] T. Smith,[3] S. Zeger,[4] T.L. DeWeese,[1] and S.R. Alcorn[1]; *[1]Department of Radiation Oncology and Molecular Radiation Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Department of Biostatistics, Epidemiology and Informatics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [3]Department of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, [4]Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD*

Purpose/Objective(s): Up to half of patients with advanced cancer may meet diagnostic criteria for a psychiatric disorder. Yet, the impact of psychiatric diagnosis and/or medication prescription (psych Dx/Rx) on decision-making and outcomes for radiotherapy (RT) are not well-characterized. Statistical models and decision tools can be skewed when built from source data that has been influenced by implicit and explicit biases in medical diagnoses and treatment. We investigate the impact of psych Dx/Rx on palliative RT outcomes and decisions to ascertain whether this may serve as a source of bias in prognostication and decision-making in this patient population.

Materials/Methods: Retrospective review identified patients treated with conventional external beam (cEBRT) or stereotactic body RT (SBRT) for bone metastases at 3 radiation oncology facilities from 5/2013-12/2019. Prevalence of psych Dx/Rx was collected, along with 27 other patient, disease, and treatment characteristics that were identified as collectively predictive of survival using the validated Bone Metastases Ensemble Trees for Survival (BMETS) machine-learning model and decision support platform. RT details were documented. Overall survival from consultation to death or last follow up was estimated using the Kaplan-Meier method. Uni- and multivariable regressions evaluated associations between psych Dx/Rx, survival, and RT fractionation and modality. Reported statistics are $p<.05$.

Results: 346 treated patients were evaluated, including 178 patients with cEBRT and 168 patients with SBRT (median 10 vs. 3 fractions). Psych Dx/Rx was more prevalent among patients treated with cEBRT vs. SBRT (40% vs. 28.6%). On univariate analysis, odds of psych Dx/Rx was significantly higher for patients requiring opiate analgesics, females, white (vs. black) race, and breast (vs. prostate) cancer (OR 2.0, 3.7, 4.3, 5.6). Psych Dx/Rx was associated with use of fewer fractions for cEBRT (β coefficient -1.0) but not SBRT. On multivariable analyses for the cEBRT cohort controlling for other univariable associations, use of fewer fractions remained significantly associated with psych Dx/Rx (β coefficient -1.1). While overall survival was significantly longer for patients treated with SBRT (median 3.3 vs. 0.8 years for cEBRT), psych Dx/Rx was not associated with survival or strongly linked to other predictors of advanced disease for either RT cohort.

Conclusion: Psych Dx/Rx does not appear to impact survival for patients undergoing palliative bone RT, arguing against its direct role as a source of bias in survival models like BMETS. However, given that psych Dx/Rx is associated with lower use of SBRT and foreshortened cEBRT regimens, this variable may serve a source of bias in treatment selection, albeit perhaps concordant with the patient's best interest. This highlights the importance of enhanced shared decision-making in this potentially vulnerable patient population.

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Impact of Radiation Treatment Delay Due to COVID-19 Pandemic

S. Mitra,[1] D. Simson,[1] H. Khurana,[1] S. Tandon,[1] P. Ahlawat,[2] N. Bansal,[1] S.R. Barik,[3] J.S. Sethi,[1] K.S. Chufal,[4] and M. Gairola[5]; *[1]Rajiv Gandhi Cancer Institute and Research Centre, New Delhi, India, [2]Department of Radiation Oncology, Rajiv Gandhi Cancer Institute & Research Centre, New Delhi, India, Delhi, Delhi, India, [3]Rajiv Gandhi Cancer Institute and Research Centre, Delhi, India, [4]Department of Radiation Oncology, Rajiv Gandhi Cancer Institute & Research Centre, New Delhi, India, [5]Rajiv Gandhi Cancer Institute and Research Centre, New Delhi, Delhi, India*

Purpose/Objective(s): To study the effect of radiation treatment delay due to COVID-19 infection.

Materials/Methods: This study is a descriptive analysis. We studied all patients who were COVID-19 positive while undergoing radiation treatment. In addition, those COVID-19 positive patients before the start of radiation during their neoadjuvant treatment period or surgery were also analyzed. However, patients detected with COVID-19 infection after the radiation treatment course were excluded. The study period was from June 2020 to May 2021. A radiation treatment delay was defined as a delay in starting the treatment, a break in therapy during their scheduled radiation course, or treatment discontinuation. Patients who had a radiation treatment delay were followed-up till December 2021.

Results: Ninety-four patients who met the criteria were identified for the analysis. Seventy-seven of them had a mild infection, while 17 had a moderate or severe infection. Of the 94 patients identified, 83 patients had a treatment delay. The median treatment delay (MTD) was 18 (6 to 47) days and the median follow-up period was 13 months. In this cohort, 66 patients were treated with a curative intent, of which 51 are on follow-up {34 patients are disease-free (MTD − 18.5, 10 to 43), seven had either a residual disease or locoregional recurrence (MTD − 22, 10 to 32), seven had distant metastasis (MTD − 18, 15 to 47), and three patients died (MTD − 20, 8 to 27)}. Amongst the three patients who died, only one died of COVID-19 infection or sequel (Case Fatality Rate, CFR − 1.06%).

Conclusion: The CFR due to COVID-19 infection amongst those who underwent radiotherapy was low. At the same time, higher MTD might have been the reason for residual or locoregional recurrences. However, a longer follow-up is required to confirm this. Till then, it will remain debatable whether it was worth delaying radiotherapy for mild to moderate COVID-19 infection for a significant time to cause a potential cancer treatment failure.

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