Trial eligibility of locally advanced NSCLC patients receiving proton therapy using multi-institutional registry data: Are current cooperative group trials being designed for the right patients?

Background

Participation in oncology clinical trials has historically been low compared to the number of individuals diagnosed with cancer each year. It has been reported that between 3% and 5% of adults with cancer participate in clinical trials. However, research into this statistic usually focuses on the reasons why patients choose not to participate, rather than whether or not clinical trials are designed adequately to capture a proper patient sample truly representative of the population being studied. This study explored a sample of lung cancer patients who received treatment with proton therapy and compared the group to the eligibility requirements of two lung cancer trials. We hypothesized that most patients treated with proton therapy would not be eligible to participate in the currently accruing cooperative group studies.

Methods

The Proton Collaborative Group's (PCG) prospective registry was mined for information on all lung cancer patients who received proton therapy between the years of 2010 and 2015. These patients were then evaluated to determine if they would have been eligible to participate in either of the two active cooperative group clinical trials for proton therapy currently enrolling patients with inoperable stage II-IIIB non-small cell lung cancer (NSCLC): PCG LUN005 (phase I/II trial of hypofractionated proton therapy) and RTOG 1308 (phase III trial randomizing to protons versus photons).

Results

A total of 244 consecutive patients with lung cancer were available in the registry for evaluation. Patients were ineligible for LUN005 and RTOG 1308 due to exclusionary stage (n=77), histology (n=37), performance status (n=66), prior surgery for lung cancer (n=53), and/or prior radiation therapy (RT) for lung cancer (n=53). Of the remaining 55 patients, 27 were enrolled in the PCG registry prior to LUN005 or RTOG 1308 opening for accrual. This left 28 patients. Those patients were ineligible for the following reasons: prior chemotherapy (n=3), prior RT within the treatment field (n=3), prior cancer (n=6), weight loss (n=2), outdated procedures (n=2), oxygen dependence (n=1), disease progression prior to RT start (n=2), or not felt to be an upfront candidate for concurrent chemotherapy and RT (n=2). This left 7 patients who were ultimately eligible for enrollment, one of which refused trial participation and one of which the reason for not participating was unknown. Reasons for lack of enrollment of the 5 remaining patients on LUN005 were due to administrative issues (ex: protocol enrollment on hold pending interim review), whereas RTOG 1308 was unavailable for those patients at their treating center.

Conclusion

The vast majority of patients treated with proton therapy for lung cancer on PCG's prospective registry were not eligible for participation cooperative group trials. Given the high ineligibility rate among patients found in this study, pragmatic trials with more inclusive eligibility criteria are needed to better

mirror the general population of patients with newly diagnosed, locally advanced NSCLC. More inclusive trials may allow for increased rates of trial participation and further advances and improvements in survival.