

A real-world study of thoracic radiation for extensive-stage small-cell lung cancer in the context of immunotherapy

Yunbin Gao¹, Xuyu Zhang¹, Dawei Zhao¹, Jifeng Sun¹, Lixia Zhang², Song Guan¹, and Lujun Zhao³

¹Tianjin Medical University Cancer Institute & Hospital, National Clinical Research Center for Cancer

²Tianjin Medical University Cancer Institute and Hospital

³Tianjin Medical University Cancer Institute and Hospital, National Clinical Research center of cancer, Key Laboratory of Cancer Prevention and Therapy, Tianjin 300060, China

April 12, 2024

Abstract

Objective: It is already established that thoracic radiation therapy (TRT) enhances the outcomes of patients with extensive-stage small cell lung cancer (ES-SCLC) after chemotherapy response. This investigation aimed to elucidate TRT's impact on ES-SCLC patients during immunotherapy. **Methods:** This retrospective research was authorized by our institute IRB and included histopathology-confirmed ES-SCLC cases that underwent chemoimmunotherapy with or without TRT as primary treatment at our hospital between October 2018 to March 2022. With the help of propensity score matching, the selection bias was minimized. The research endpoints were progression-free survival (PFS) and overall survival (OS), which were determined via Kaplan-Meier, from first-line treatment initiation time. Survivals in different cohorts were compared with the help of a Log-rank test. Furthermore, Cox proportional hazards regression was applied to examine factors linked with survival. With the help of subgroup analyses, the influencing factors on TRT were assessed. **Results:** This investigation analyzed 172 patients who were followed up for a median of 20.1 months. The median PFS and OS for patients receiving TRT were 11.3 and 24.4 months, respectively, while for those without TRT, the values were 15.9 and 6.6 months ($p < 0.001$ and $p = 0.006$, respectively). According to the multivariate Cox regression assessment, thoracic radiotherapy was an independent favourable factor for both OS and PFS. Per the subgroup analysis, patients in all subgroups may have OS beneficial after TRT. **Conclusions:** Thoracic radiation therapy may improve PFS and OS in ES-SCLC cases undergoing chemoimmunotherapy as the primary treatment. Further investigation by randomized controlled studies is needed for confirmation.

A real-world study of thoracic radiation for extensive-stage small-cell lung cancer in the context of immunotherapy

Yunbin Gao^{1,2}, Xuyu Zhang¹, Dawei Zhao¹, Jifeng Sun¹, Lixia Zhang¹, Song Guan¹, Lujun Zhao^{1,*}

1. Department of Radiation Oncology, Tianjin Medical University Cancer Institute and Hospital, National Clinical Research Center for Cancer, Tianjin Key Laboratory of Cancer Prevention and Therapy, Tianjin's Clinical Research Center for Cancer, Tianjin, China.

2. Department of Oncology, Jining No. 1 People's Hospital, Jining 272000, Shandong, China.

* Corresponding author at: Department of Radiation Oncology, Tianjin Medical University Cancer Institute and Hospital, West Huan-Hu Rd, Ti Yuan Bei, Hexi District, Tianjin, China.

Email: zhaolujun@tjmuch.com

Hosted file

TRT in ES-SCLC in immunotherapy era.docx available at <https://authorea.com/users/766991/articles/824389-a-real-world-study-of-thoracic-radiation-for-extensive-stage-small-cell-lung-cancer-in-the-context-of-immunotherapy>