Is Radiotherapy Still Needed in Bulky Advanced Hodgkin Lymphoma? A Systematic Review and Meta-Analysis

B. Al Zoubi[1], O. Abdelsalam2, Y. Al-Mashaqbah1, H. Radi3, B. Khater1, M. Jazazi4, Z. Al Zu'bi5

1 Faculty of Medicine, The Hashemite University, Zarqa, Jordan
2 Faculty of Medicine, New Mansoura University, New Mansoura, Egypt
3 Faculty of Medicine, Yarmouk University, Irbid, Jordan
4Traditional Medicine University, Yerevan, Armenia
5 Senior pediatric hematology oncology queen Rania children hospital/RMS, Al-salt, Jordan

Introduction

The role of consolidation radiotherapy (RT) in patients with advanced-stage Hodgkin lymphoma (HL) who present with bulky disease remains controversial, especially after achieving complete metabolic remission (CMR) following ABVD-based chemotherapy. While radiotherapy has traditionally been included to improve local control, the benefit of its addition in the modern era of imaging-guided response assessment is uncertain.

Aim

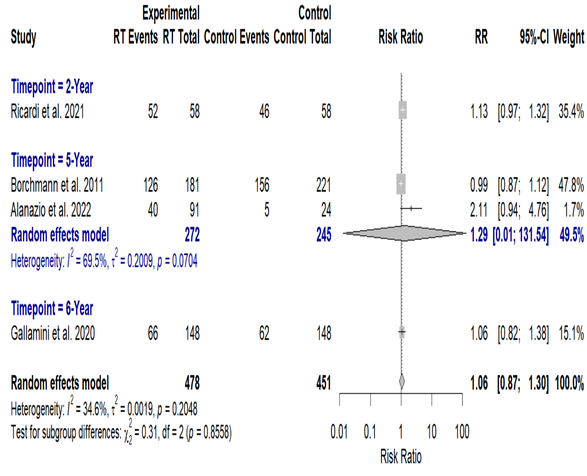
To evaluate the effectiveness of consolidation radiotherapy compared to no additional treatment in patients with bulky advanced-stage HL who have achieved complete remission after chemotherapy, with a focus on progression-free survival (PFS).

Methods

PubMed, Embase, Scopus, Web of Science, and Google Scholar databases were systematically searched from inception until May 2025. Eligible studies included randomized controlled trials and observational studies comparing outcomes between radiotherapy and no radiotherapy in patients with bulky advanced-stage HL post-chemotherapy remission. The primary outcome was progression-free survival (PFS) at different timepoints. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated. The review followed PRISMA (2020) guidelines, and statistical analysis was performed using R software version 4.3.2.

Results

A total of four studies involving 1,039 patients were included. At the 2-year follow-up (Ricardi et al., 2021), progression-free survival (PFS) was comparable between the radiotherapy (RT) group (52/58 events) and the control group (46/58 events). At 5 years, pooled results from Borchmann et al. (2011) and Alanazio et al. (2022) showed no significant difference in PFS between groups (RR = 1.06, 95% CI: 0.82–1.38, p > 0.05). Similarly, 6-year data from Gallamini et al. (2020) reported near-identical outcomes (RT: 66/148 vs. control: 62/148). Overall, RT did not offer a statistically significant benefit in PFS (RR = 1.06, 95% CI: 0.87–1.30, p > 0.05; I^2 = 34.6%).



Summary

This analysis demonstrates that consolidation radiotherapy does not significantly improve progression-free survival in patients with bulky advanced-stage Hodgkin lymphoma who achieve complete remission after chemotherapy. Given the lack of added benefit, routine use of RT in this context appears unnecessary.

The authors declare no competing interests