Assessing Survival in Recurrent or Metastatic Head and Neck Cancer Patients After Radiotherapy With/Without Targeted Molecular Therapy: A Concise Systematic Review

Abstract

Objective: This systematic review evaluates the outcomes of different radiotherapeutic strategies in the management of head and neck cancers (HNC), including curative-intent radiotherapy (RT), palliative stereotactic body radiotherapy (SBRT), multimodal approaches combining surgery with RT, and immunotherapy-based combinations.

Methodology: A structured literature search was conducted using four electronic databases, PubMed, BMC, Scopus, and Ovid, to identify studies relevant to palliative radiotherapy for head and neck squamous cell carcinoma (HNSCC), with a focus on the quad shot regimen and other hypofractionated approaches. The search strategy included keywords such as “palliative radiotherapy,” “head and neck cancer,” “quad shot,” “hypofractionated RT,” and “recurrent HNSCC”, limited to studies published in English up to March 2025.

Results: Fourteen studies were included in this systematic review, with 26,734 patients collectively analyzed. Curative RT demonstrated favorable outcomes in large cohorts, notably in improving overall survival (OS) and local control (LC). Palliative SBRT regimens offered substantial symptomatic relief and disease control with minimal toxicity in elderly and inoperable populations.

Conclusion: Multimodal treatments yielded the most promising survival rates, particularly in early-stage disease. Furthermore, immunotherapy with RT showed potential synergy, enhancing both OS and progression-free survival (PFS).