

ABVD Versus BEACOPP for Front-Line Treatment of Hodgkin Lymphoma: A Systematic Review and Meta-analysis

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Introduction

Classical Hodgkin lymphoma is a highly curable hematologic malignancy, yet selecting the optimal front-line regimen for advanced-stage disease remains a critical clinical debate. **ABVD** (doxorubicin, bleomycin, vinblastine, dacarbazine) is widely favored for its favorable, manageable toxicity profile. **BEACOPP** (bleomycin, etoposide, doxorubicin, cyclophosphamide, vincristine, procarbazine, prednisone) offers superior dose intensity and enhanced tumor control.

Methods and Materials

- Comprehensive search conducted across PubMed, Cochrane Library, Embase, Scopus, and ScienceDirect from inception through October 2025 with no language or geographical restrictions. A total of 2,858 records were retrieved, screened, and deduplicated using the Rayyan AI tool. Quality and risk of bias were independently evaluated using the **Newcastle–Ottawa Scale (NOS)** for observational studies and the **Cochrane Risk of Bias 2 (ROB-2)** tool across five domains for randomized controlled trials. Pooled hazard ratios (HRs) with 95% confidence intervals (CIs) for time-to-event outcomes, and risk ratios (RRs) for dichotomous outcomes using a **random-effects model** (Mantel–Haenszel method).

Results

- **Progression-Free Survival (PFS):** BEACOPP significantly improved progression-free survival compared to ABVD (Hazard Ratio HR = 0.62, 95% CI: 0.45–0.85, p = 0.003), representing a 38% relative reduction in the risk of disease progression or death.
- **Serious Adverse Events (SAEs):** BEACOPP was associated with a more than fourfold higher risk of serious adverse events compared to ABVD (Risk Ratio RR = 4.60, 95%CI: 2.37–8.93, p < 0.00001).
- Although BEACOPP showed a numerical reduction in mortality risk, the difference was **not statistically significant** compared to ABVD. BEACOPP offers superior disease control (higher PFS) at the cost of substantially greater short-term toxicity.

Conclusions

- Front-line therapy with BEACOPP compared to ABVD does not demonstrate a statistically significant difference in the incidence of secondary malignancies based on current pooled trial data.
- However, substantial statistical heterogeneity underscores the need for longer-term follow-up and individualized risk-benefit stratification when selecting intensive regimens for Hodgkin lymphoma patients.

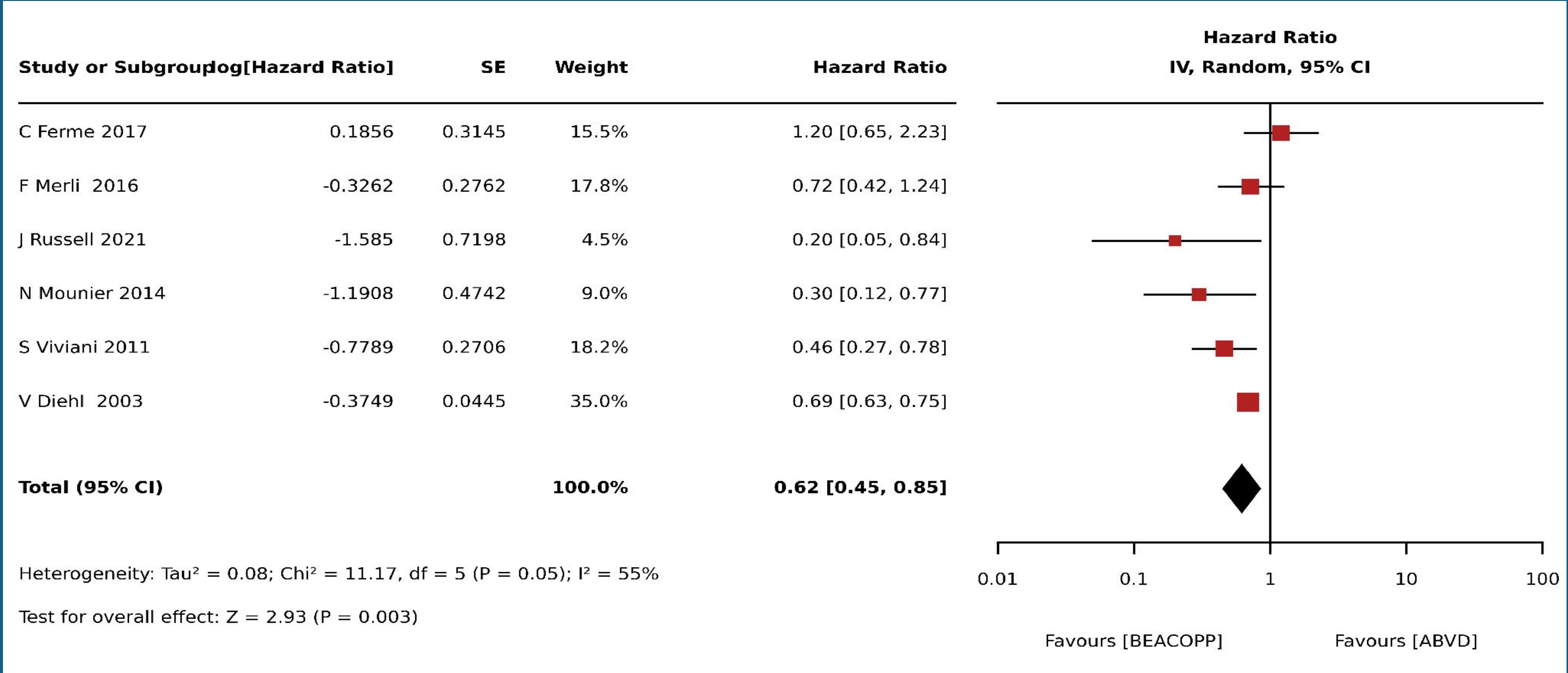
References

1. Diehl V, Franklin J, Lathan B, Paulus U, Hasenclever D, et al. Standard and Increased-Dose BEACOPP Chemotherapy Compared with COPP-ABVD for Advanced Hodgkin’s Disease. N Engl J Med. 2003 Jun 12;348(24):2386–95.

2. Viviani S, Levis A, Bonfante V, et al. ABVD versus BEACOPP for Hodgkin’s lymphoma when high-dose salvage is planned. N Engl J Med. 2011 Jul 21;365(3):203–12.

3. André MPE, Carde P, Viviani M, et al. Long-term overall survival and toxicities of ABVD vs BEACOPP in advanced Hodgkin lymphoma: A pooled analysis of four randomized trials. Cancer Med. 2020 Sep;9(18):6565–75.

Progression-Free Survival (PFS)



Overall Survival (OS)

