Response rate to the treatment of Waldenström macroglobulinemia: A meta-analysis of the results of clinical trials

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Waldenström macroglobulinemia (WM) is a malignant lymphoproliferative disorder characterized by the presence of a high level of serum monoclonal IgM and a lymphoplasmacytic infiltrate in the bone marrow. This meta-analysis sought to assess the effectiveness of the different treatments for WM tested in published trials using the response rate (RR) as the main outcome measure. Forty-six articles (1409 patients) identified were entered in a variable effects model meta-analysis of proportions (rates and sample sizes). A greater response to treatment was produced in patients treated with a combination of 2+ drugs (RR = 73%; 95%CI: 62, 83; $p < 0.01$) than in those receiving monotherapy with rituximab (RR = 44%; 95%CI: 34, 55; $p < 0.01$) or a purine analogue [61% (95%CI: 43, 78; $p < 0.01$) for cladribine and 53% (95%CI: 34, 72; $p < 0.01$) for fludarabine]. The combination rituximab + cladribine emerged as particularly effective (RR = 87%; 95%CI: 78, 94; $p < 0.01$), slightly more effective than rituximab + bortezomib/dexamethasone (RR = 84%; 95%CI: 79, 88; $p < 0.01$) and rituximab + cyclophosphamide/dexamethasone [RR = 81% (95%CI: 72, 88; $p < 0.01$)]. Our results are in overall agreement with treatment recommendations from the seventh International Workshops on WM. Our findings are limited by the fact that we could not analyze progression-free survival (PFS). More phase II/III trials are needed to corroborate promising recent

findings with bendamustine and carfilzomib and further research are needed to standardize recommendations based on maximum treatment efficacy combined with lowest toxicity, differentiation between first vs second line treatment, or long-term follow up after treatment.

Meta-analysis

Purine analogues

Rituximab

Waldeström disease

bendamustine

bortezomib

carfilzomib

cladribine

cyclophosphamide

dexamethasone

fludarabine

rituximab

drug combination

cancer combination chemotherapy

drug efficacy

drug response

human

meta analysis

monotherapy

progression free survival

Review

treatment outcome

Waldenstroem macroglobulinemia

drug combination

Waldenstrom Macroglobulinemia

Drug Combinations

Humans

Treatment Outcome

Waldenstrom Macroglobulinemia