- Our novel statistical modeling approach can be used to adjust for trial heterogeneity in order to make informed comparisons between treatments when no head-to-head trial is available.

- By adjusting for known or suspected treatment modifiers and controlling for differences in patient characteristics across the placebo-controlled trials of oral therapies for multiple sclerosis, our study provides the most informed comparison of fingolimod, dimethyl fumarate and teriflunomide.

- Our study predicts that patients treated with fingolimod have a significantly higher probability of achieving no evidence of disease activity status for some measures compared with those treated with dimethyl fumarate or teriflunomide.

- The modeling strategy applied in our study offers clear advantages over unadjusted comparisons, which can be subject to bias.

- However, the results here cannot be compared with evidence from a randomized clinical trial and need to be interpreted with caution owing to the assumptions inherent in any modeling study.