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ELEVENTH ANNUAL MEETING

The Difference in Mortality, Seroconversion, and Duration of Hospitalization Between Patients With and Without Anti-CD20 Antibody Therapy Among Hematological Malignancies With Superadded COVID-19 Infection.

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INTRODUCTION

The interplay between COVID-19, cancer, and the immune system complicates the disease condition and the treatment in cancer patients due to existing immunosuppression.[1,2] The impact of COVID-19 on the outcomes of lymphoma patients is an area of active research, and recent studies have highlighted the need for further investigation into the use of immunosuppressive therapy in this population. The lack of sufficient data prevented the establishment of clear guidelines for the treatment of hematologic malignancies in patients with COVID-19.

METHODS

Study Design: The study was a systematic review and meta-analysis. This study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[3]

Eligibility criteria: We conducted a systematic review and a meta-analysis to determine the difference in mortality, seroconversion, duration of hospitalization, and other outcomes of anti-CD20 antibody therapy in lymphoma patients with COVID-19. Excluded from the study were solid tumor patients.

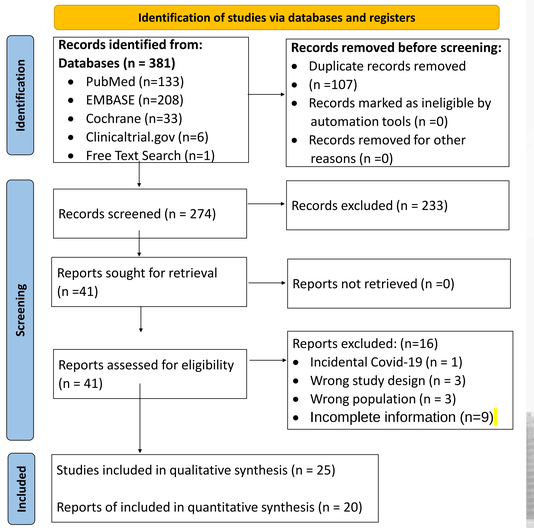
Information sources: We systematically searched PubMed, Embase, Cochrane CENTRAL, and clinicaltrials.gov untill 4th October, 2022.

Search strategy: The search was conducted using subject headings corresponding to particular databases (“MeSH” in PubMed, “Emtree” in Embase), alternate terms, and supplementary concepts.

Selection process: The screening process consisted of two stages - Level 1 (Title and abstract screening) and Level 2 (full-text screening). Three independent reviewers utilized Rayyan (reference) software to conduct the screening in a blinded manner.

Data collection process: Comprehensive data extraction was done by two independent reviewers from eligible studies to evaluate various outcomes among lymphoma patients with superadded COVID-19 infection.

Risk of bias assessment: Risk of bias assessment was done by two independent reviewers using the National Heart Lung and Blood Institute (NHLBI) Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies.



CONCLUSIONS

Anti-CD20 therapy suppresses the immune system, increasing vulnerability to COVID-19. Our analysis found higher mortality rates among COVID-19 patients on CD20 therapy. However, this study only included haematological malignancy patients and had a small sample size. Further research is needed on mortality and duration of viral shedding in COVID-19 patients on anti-CD20 medication.

RESULTS

Out of 381 identified articles, 274 were screened, and 249 were excluded. 25 studies were included in the final review. Mortality, mechanical ventilation, ICU admission, days for the swab to become negative, and duration of hospitalization were reported by 12, 2, 3, 5, and 2 studies respectively.

The data on palliative care and progression-free survival were not reported in any study. The pooled hazard ratio of overall survival was 0.41 [95% CI 0.23, 0.75] among people treated with anti CD-20 antibodies as compared to people without anti-CD-20 antibody therapy. The pooled proportion of mortality in the anti-CD20 group was 0.35 [95% CI 0.19; 0.51] and there is no publication bias for mortality in the funnel plot (p=0.831).

The pooled proportion of patients requiring mechanical ventilation and admission to the Intensive Care Unit (ICU) was 0.23 [95% CI 0.00; 0.49] and 0.50 [95% CI 0.00; 1.00], respectively. The pooled mean duration for the swab to become negative and hospitalization was 27.39 [95% CI 17.29, 43.38] and 15.80 [95% CI 11.36, 21.76] days respectively.

Figure 2: Forest plot showing comparison of survival between anti-CD20 group and no anti-CD20 group

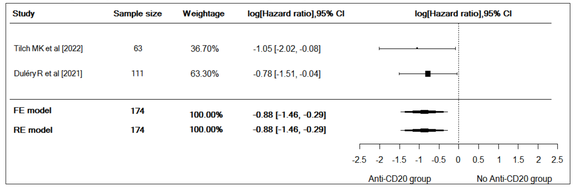
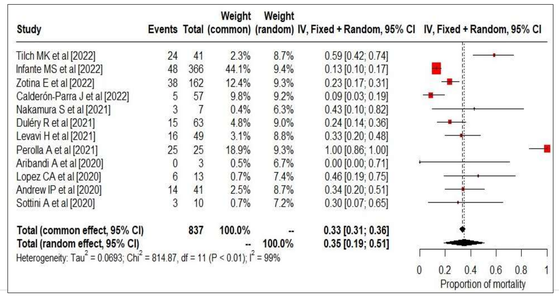


Figure 2: Forest plot depicting proportion of mortality in the anti-CD20 group



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