

Daluwathumulla Gamage S.V., Jayawardana K.D.S.T.

SYSTEMIC REVIEW AND META-ANALYSIS OF VIROLOGICAL RELAPSE RATE IN PATIENTS WITH DISCONTINUATION OF HEPATITIS B TREATMENT

Tutors: professor Danilau D.E., associate professor Litvinchuk D.V.

*Department of Infectious Diseases with Advanced Training and Retraining Course
Belarusian State Medical University, Minsk*

Relevance. Chronic Hepatitis B (CHB) remains a major global health concern, with nucleos(t)ide analogues (NA) being the mainstay of antiviral therapy. Current guidelines provide stopping criteria for NA therapy, but concerns about virological relapse and long-term outcomes persist. This meta-analysis aims to evaluate the safety of discontinuing NA in CHB patients who meet the stopping criteria.

The long-term management of CHB is crucial in reducing disease progression and preventing hepatocellular carcinoma. While NA therapy effectively suppresses viral replication, indefinite treatment poses economic burdens and potential adverse effects. Understanding the safety of NA discontinuation is essential for optimizing treatment strategies.

Aim: this study aims to assess the risk of virological relapse in CHB patients who meet the stopping criteria. **Tasks:**

1. Screen medical databases PubMed, Google Scholar and Science Direct for original researches that report the outcomes of NA discontinuation.
2. Conduct a systematic review and meta-analysis of studies assessing NA discontinuation in CHB patients.
3. Determine the incidence of virological post-NA discontinuation.

Materials and methods. A systematic search was conducted in PubMed, Google Scholar and Science Direct databases using predefined keywords. Studies reporting relapse rates after NA discontinuation in CHB patients were included. Data extraction included study characteristics, patient demographics, NA used, HBeAg status, stopping criteria, and relapse outcomes. Meta-analysis was performed using R (ver. 4.4.1) with packages meta, metaphor, calculating pooled estimates and confidence intervals of virological and clinical relapse post NA discontinuation. Heterogeneity was assessed using I^2 statistics, and meta-regression was applied to explore influencing factors.

Results and their discussion. The analysis included 27 studies with a total of 6503 patients. The heterogeneity was (97.3%), thus we used random effect model to estimate effect. The pooled virological relapse rate was 56.3%. We estimated variance and outcome using meta regression using the predictors (Newcastle Ottawa Scale, region and year of publication), out of which none were statistically significant.

Conclusion. 56.3% of patients had relapse, this rises concerns about the reconsideration of the stopping of NAs. Due to high heterogeneity, it is important to conduct further researches to gather more results. When using Egger's test, we observed signs of publication bias, indicating lack of publications of small sample sizes reporting high relapse rates. We conducted a meta-regression to assess variance and outcomes using predictors such as the Newcastle-Ottawa Scale, region, and publication year; however, none of these factors showed statistical significance and hence does not explain the heterogeneity of the obtained results.