In this study, we conclude that statin use was associated with a 20% lower risk of CRC in non-IBD patients. Though statin use was associated with a 60% lower risk of CRC in IBD populations, further research is needed to confirm this association and future studies should also focus on determining whether the chemopreventive effects of statins differ between ulcerative colitis and Crohn’s disease patients.

**CONCLUSION:**

Prospective randomized trials are needed to confirm this association and future studies should also focus on determining whether the chemopreventive effects of statins differ between ulcerative colitis and Crohn’s disease patients.

**METHODS:**

A comprehensive literature search to identify all articles investigating statin use and the risk of CRC in IBD and non-IBD populations was performed using PubMed, Embase, Scopus, Web of Science, and Science Direct from inception to May 2020. We included studies that presented an odds ratio (OR) with 95% confidence interval (CI) or presented data sufficient to calculate the OR with a 95% CI. Comprehensive Meta-Analysis Version 3.0 was used in this version to create a Forrest Plot.

**RESULTS:**

To study the risk of CRC and statin use in non-IBD populations, 52 studies (17 cohort studies, 27 case-control studies, and 8 randomized clinical trials) with 11,499,396 patients were included (2,123,293 statin users, 933,013 non-statin users). Statin use was associated with a significant risk reduction of CRC in the non-IBD population; the pooled OR was 0.80 (95% CI 0.73-0.88; P < 0.001) (Figure 1). Publication bias was not detected after inspection of the funnel plot and Egger’s Regression. A separate analysis to study the risk of CRC and statin use in IBD populations was performed that included five observational studies (including one unpublished abstract) with 15,342 IBD patients identified (1,161 statin users and 12,185 non-statin users in published studies). Statin use was associated with a significant risk reduction for CRC in IBD patients; the pooled OR was 0.40 (95% CI 0.19-0.86; P = 0.019) (Figure 2), however, publication bias was identified.

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In this study, we conclude that statin use was associated with a 20% lower risk of CRC in non-IBD patients. Though statin use was associated with a 60% lower risk of CRC in IBD patients, prospective randomized trials are needed to confirm this association and future studies should also focus on determining whether the chemopreventive effects of statins differ between ulcerative colitis and Crohn’s disease patients.

**INTRODUCTION:**

Colorectal cancer (CRC) is the third most frequently diagnosed cancer worldwide. A large body of evidence has shown that chemoprevention with nonsteroidal anti-inflammatory drugs, particularly aspirin, can reduce the risk of CRC but with an increased risk of bleeding. Finding a safe and effective chemopreventive agent may add to the current CRC preventive strategies. Statins are the most prescribed medications worldwide and are generally well-tolerated. In this meta-analysis, we sought to determine whether statins can effectively reduce the risk of CRC.

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