EDITORIAL

INTESTINAL RESEARCH

pISSN 1598-9100 • eISSN 2288-1956
https://doi.org/10.5217/ir.2025.00048
Intest Res 2025;23(2):113-114

Does statin have a chemopreventive effect in patients with ulcerative colitis?

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Article: Risk of malignancies and chemopreventive effect of statin, metformin, and aspirin in Korean patients with ulcerative colitis: a nationwide population-based study **(Intest Res 2025;23:129-143)**

Many studies have suggested that statins may have chemopreventive potential against various cancers, beyond their cholesterol-lowering effects.[1-7] Inhibition of 3-hydroxy-3-methylglutaryl-coenzyme A reductase by statins leads to the reduced production of intermediates that contribute to carcinogenesis in the mevalonate pathway.[1] Statins have been reported to have chemopreventive potential against cancer by inducing apoptosis, inhibiting tumor growth or angiogenesis, stimulating cellular immunity, and enhancing the anticancer effects of some cytokines.[1]

Oh et al.[8] reported that after adjusting for age, sex, comorbidities, and ulcerative colitis (UC) treatment, statins showed a chemopreventive effect for all malignancies (adjusted hazard ratio [HR], 0.764; 95% confidence interval [CI], 0.645–0.905; $P=0.002$). Adjusted HRs for all malignancies decreased with a longer duration of statin use (duration ≤1 year, >1–3 years, >3–5 years, and >5 years; adjusted HRs [95% CI] = 0.868 [0.704–1.069], 0.704 [0.549–0.904], 0.693 [0.504–0.954], and 0.627 [0.438–0.896]; $P=0.009$).[8]

The cancer most frequently suggested to be prevented by statins is colorectal cancer (CRC). A meta-analysis including 42 individual studies demonstrated a modest reduction in risk of CRC among statin users.[1] Recently, numerous studies have reported that statins may also have protective effects against various other types of cancer beyond CRC.[2-7] Meta-analysis studies, not individual studies, have revealed that statin use is associated with a reduced risk of pancreatic cancer,[4] hepatocellular carcinoma,[6] prostate cancer,[2] gynecologic cancer,[3] diffuse large B-cell lymphoma,[5] and multiple myeloma.[7] However, these studies did not target inflammatory bowel disease. It may simply be thought that the cancer-preventive effect of statins observed in the general population can also be applied to patients with UC. However, patients with UC may have an increased risk of cancer due to the disease itself, such as an imbalance in immune regulation and chronic inflammatory state, as well as the use of drugs such as immunosuppressants and biologic agents.[9] Therefore, the cancer prevention effect of statins in patients with UC may differ from the results observed in the general population.

Oh et al.'s study suggests that statin use may also help prevent cancer in patients with UC. Oh et al.'s study showed that statins have a dose-dependent chemopreventive effect for all malignancies in patients with UC. However, unfortunately, the limited number of cases did not allow detailed analysis by each cancer type, except CRC. In this study, statin use tended to be associated with a lower risk of CRC, but the results were not statistically significant (adjusted HR, 0.844; 95% CI, 0.535–1.332; $P=0.466$). The number of cases may have been small to reach significant results for CRC. A recent meta-analysis in-

Received March 25, 2025. **Accepted** March 31, 2025.
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cluding 2 studies reported that statin-exposed UC patients had a lower risk of CRC (odds ratio, 0.58; 95% CI, 0.46–0.73; $P<0.001$).[10] However, no studies have evaluated the effects of statins on cancers other than CRC in patients with UC.

Although Oh et al.'s study suggests that statins may have beneficial effects on patients with UC, it would not be appropriate to recommend statin use for cancer prevention for all patients with UC. However, it may be necessary to regularly monitor cholesterol levels in these patients, and actively consider statin use if hypercholesterolemia is observed. Future large-scale studies including more patients will be needed to determine whether the cancers for which statins have been reported to have a preventive effect are also preventive in patients with UC, and whether statin use reduces lymphomas that may be associated with the use of immunosuppressants and biologic agents.

ADDITIONAL INFORMATION

Funding Source
The author received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest
Jung YS is an editorial board member of the journal but was not involved in the peer reviewer selection, evaluation, or decision process of this article. No other potential conflicts of interest relevant to this article were reported.

Data Availability Statement
Not applicable.

Author Contributions
Writing and approval of the final manuscript: Jung YS.

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