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Introduction Colorectal cancer (CRC) remains a major clinical problem: advances in screening and therapies have improved the prognosis, but effective and safe chemopreventative strategies would likely be beneficial. HMG-CoA reductase inhibitors (statins) have been shown to have anti-CRC effects in vitro, inhibiting growth and inducing apoptosis, but studies examining the effects of statins on CRC incidence have produced inconsistent results, possibly because of varying experimental methodologies and duration of statin exposure. Because of the time taken to develop CRC, studies with only short-term statin exposure may have yielded negative results. Adenomatous polyps (APs) are the precursors of CRC, and we hypothesized that statins may affect the incidence of APs, and this effect may be manifest in a shorter time span.

Methods We performed a case-control study with research ethics and R&D approvals. Patients attending for diagnostic colonoscopy and not undergoing polyp surveillance underwent detailed interviews with trained interviewers to determine drug and risk factor exposure, referral letters and clinical notes were used to corroborate the data. Results were calculated as odds ratios, with logistical regression to adjust for demographic and other risk and preventative factors.

Results 116 AP and 132 control subjects were interviewed. In the unadjusted analysis, statin use was associated with a reduced AP incidence (OR 0.17 (95% CI 0.09 to 0.32)). Use of aspirin, NSAIDs and metformin were also associated with reduced AP incidence in the unadjusted analysis. However, the effect of statins remained highly significant after adjustment: and was associated with a reduction in the presence of APs (adjusted OR 0.10 (0.04–0.26) ($P < 0.01$)). The majority of statin use was simvastatin but the effects were consistent for all statins. Higher doses of statins and longer duration of statin use were associated with a significantly greater reduction in the incidence of APs. Similar reductions were seen with high- and low risk APs. Interestingly the protective effect of aspirin and other drugs disappeared when adjusted for statin exposure.

Conclusion Statin use is associated with a reduced incidence of colorectal adenomatous polyps. Further studies examining the potential chemopreventative actions should be undertaken. Subsequent studies examining putative chemopreventative actions should adjust for statin exposure.

Competing interests None.

Keywords aspirin, colonic polyps, colonoscopy, HMG-CoA reductase inhibitors.

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STATINS USE IS ASSOCIATED WITH A REDUCED INCIDENCE OF COLORECTAL ADENOMATOUS POLYPS: A CASE-CONTROL STUDY

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