



LETTER TO THE EDITOR

Statins therapy and colorectal cancer risk



Statins are commonly used for the treatment of hypercholesterolemia. The association between statins therapy and cancer risk has been extensively assessed [1,2]. Recently a cohort study in Republic of Korea conducted by Lee et al. published in *Nutrition, Metabolism & Cardiovascular Diseases* revealed that statins therapy was associated with reduced risk of colorectal cancer (hazard ratio = 0.56 and 95% confidence interval = 0.42–0.75 in men; hazard ratio = 0.64 and 95% confidence interval = 0.46–0.90 in women) [3]. However, a cohort study in USA conducted by Shah et al. revealed that statins therapy was not significantly associated with the risk of colorectal cancer in patients with inflammatory bowel disease (hazard ratio = 0.63 and 95% confidence interval = 0.14–2.90) [4]. In order to assess the association between statins therapy and colorectal cancer in a different population, a preliminary case-control study was conducted using the 2005–2012 database of the Taiwan National Health Insurance Program with 23 million people living in an independent country [5,6]. People ≥ 20 years old with a new diagnosis of colorectal cancer were assigned as the cases. For every case with colorectal cancer, 4 sex-matched and age-matched people without a diagnosis of colorectal cancer were selected as the controls. **Table 1** revealed that there was a negative association between colorectal cancer and statins therapy (adjusted odds ratio = 0.87 and 95% confidence interval = 0.76–0.98 for 31–180 DDDs; adjusted odds ratio = 0.62 and 95% confidence interval = 0.53–0.71 for > 180 DDDs).

In our case-control study, people without colorectal cancer were more likely to be exposure to long-term statins than those with colorectal cancer. This finding indicates that long-term statins therapy might be a protective factor against colorectal cancer, which is compatible with Lee et al.'s finding showing a negative association between colorectal cancer and high statin users [3]. One systematic review reported that statins may have a potential chemoprevention against colorectal cancer and also have an adjuvant efficacy for colorectal cancer treatment in vitro and animal studies [7]. Such a potential chemoprevention associated with statins therapy is also noticed in patients with inflammatory bowel disease [7], which is contrary to Shah et al.'s finding [4]. This systematic review also reported that patients on statins therapy before and during the treatment of colorectal cancer may have good overall and cancer specific survival rates [7]. Lee et al.'s and our studies indicate a new research direction that statins may be used as chemopreventive agents against colorectal cancer. Further studies are required to determine the detailed association between individual statin and colorectal cancer [7].

Specific author contributions

Shih-Wei Lai and Chia-Wei Fang contributed to the conception of the article, initiated the draft of the article, and contributed equally to the article.

Yu-Hung Kuo and Kuan-Fu Liao conducted data analysis.

Table 1 Association between colorectal cancer and statins therapy in people ≥ 20 years old in 2005–2012.

	Colorectal cancer (n = 4749)	No colorectal cancer (n = 18,996)	Adjusted odds ratio ^a (95% CI)	P value
No use	3886 (81.8)	15,926 (83.8)	1	
Statins use				
≤ 30 DDDs	189 (4.0)	609 (3.2)	0.99 (0.84–1.18)	0.926
31–180 DDDs	386 (8.1)	1275 (6.7)	0.87 (0.76–0.98)	0.026
> 180 DDDs	288 (6.1)	1186 (6.2)	0.62 (0.53–0.71)	< 0.001

DDD: defined daily dose.

^a Adjusted for comorbidities, socioeconomic status, and urbanization.

Conflicts of interest

The authors disclose no conflicts of interest.

Ethical statement

Insurance reimbursement claims data used in this study were available for public access. Patient identification numbers were scrambled to ensure confidentiality.

Patient informed consent was not required. This study was approved by the Research Ethics Committee of China Medical University and Hospital in Taiwan (CMUH-104-REC2-115).

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