Effect of low dose and long term use of aspirin in primary prevention of colorectal cancer: Nationwide cohort study, Taiwan 1998-2010

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Introduction

Whether lower or less frequent doses of aspirin use in primary prevention of colorectal cancer (CRC) is controversial, although high dose (300 mg or more) of aspirin use daily for 5 years or more has been shown to be effective.

The aim of this study was to explore the effect of low dose of aspirin on primary prevention of CRC.

M&M

Hybrid study of cohort with matched comparative group was used. Two longitudinal cohorts with 1000 000 beneficiaries each of the Taiwan National Health Insurance Research Dataset of year 2000, 2005 were used. As CRC rate increased after age 55, this study was limited to adults between 18-55 years old. The low dose user group were prescribed ≤150 mg aspirin daily consecutively for at least 30 days during 1998-2003 and followed until 2010. The nonuser group was matched with the user group by age, gender, three comorbidity (hypertension, diabetes mellitus, hyperlipidemia), index date (the user cases first prescribed aspirin). Records with CRC before aspirin being prescribed were excluded.

Survival analysis (log-rank test univariately and Cox's proportional hazard model multivariately) was used to examine the difference in CRC incidence among factors.

Results

Table 1. Univariate and multivariate analysis of developing colorectal cancer (CRC) age 18-55 years old, Taiwan 1998-2010 (n=48064)

Discussion

In this study, subjects were limited in age 18-55 years and predominantly had cardiovascular problems. We saw a marginal benefit of reducing CRC incidence (unadjusted hazard ratio=0.69 [95% CI=0.43-1.12]) and adjusted hazard ratio=0.64 [95% CI=0.40-1.04] among those who used low dose of aspirin for ≥3 years. Such findings were similar to two large cardiovascular prevention randomized control trials.

On the other hand, we saw a significant risk of developing CRC among those who took low dose of aspirin for <3 years, when compared with the nonuse group. We have tried our best to figure out why this happened by double checking the data, inclusion, exclusion, SAS program, or re-sampling the nonuse group. Unfortunately, we saw similar findings of higher risk of CRC for <3 year use group. We speculate that non-compliance may be a reason. Further study is needed to examine our guess.