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Editorial

Predictor for recurrent colorectal adenoma after screening colonoscopy

Colorectal cancer (CRC) is one of the leading causes of cancer-related deaths worldwide.[1] Although the incidence and mortality of CRC are gradually decreasing in Europe and North America,[2] which may be the result of broadly promoted screening programs, incidence and mortality rate of CRC continue to increase in Asia.[3] In Taiwan, CRC is the most common malignancy and the second most common cause of cancer-related deaths based on a report from the Bureau of Health Promotion.[4] Detecting and removing an adenoma by screening colonoscopy is an effective strategy for reducing the incidence and mortality of CRC.[5] After an initial colonoscopy, 20–50% of the screened patients will be found to have a recurrent adenoma or more advanced lesions (>25% villous histology, and/or size >1 cm, and/or presence of high-grade dysplasia) or even CRC on a surveillance colonoscopy within 3–5 years.[6] Therefore, it is recommended that adenoma patients should undergo regular surveillance colonoscopy. Notwithstanding this recommendation, however, colonoscopy surveillance brings a significant burden to both society and patients in terms of medical resources, costs, and potential procedure-related complications.[7] It is therefore important to identify predictive factors for adenoma recurrence in order to enhance the efficacy of surveillance and risk stratification. Current evidence has suggested that the factors predicting adenoma recurrence may be patient-related (age, sex, metabolic syndrome), adenoma-related (size, number, histology), or colonoscopy-related (location, adequacy of bowel preparation).[8,9] Nevertheless, conclusive evidence for proper risk stratification for index findings at baseline colonoscopy are lacking.

In this issue of the *Journal of the Chinese Medical Association*, Lin and colleagues[10] attempted to identify the predictors of recurrent adenoma after initial screening colonoscopy with adenoma polypectomy in a group of average-risk individuals receiving self-paid health check-ups. In this retrospective study, 356 out of 2255 individuals were found to have colonic adenoma at baseline colonoscopy when excluding those who have long-term usage of aspirin or nonsteroidal antiinflammatory drugs. During a follow-up interval of 3.07 years, 94 (26.4%) individuals had recurrent adenoma. After employing use of the Cox regression analysis, hypertension, smoking, higher serum Alanine transaminase (ALT) levels, and a multiple-located adenoma were the independent predictors for recurrent colorectal adenoma. The authors emphasized the importance of hypertension in prediction of recurrent colorectal adenoma, since its risk increased when hypertension was combined with other independent factors. Interestingly, metabolic syndrome was not an independent predicting factor in this study.

Although conflicting study results exist, hypertension has been found to be a risk factor for colorectal adenoma or even CRC.[10] The current study may be the first to show a possible role of hypertension as a predictor for recurrent colorectal adenoma among individuals receiving polypectomy with colonic adenoma at initial colonoscopy. Hypertension has been suggested to increase cancer risk by blocking and subsequently modifying apoptosis, thereby affecting cell turnover.[11] Despite this fact, the potential mechanism behind the association of hypertension and recurrent adenoma remained unknown. Furthermore, it seemed that controlling hypertension did not decrease the risk, because >50% of the individuals had taken antihypertensive drugs and still had recurrent colorectal adenoma. The finding suggested that the increased risk of recurrent adenoma in patients with hypertension may be inherited, and may not be modified.

A large number of epidemiological studies support the proposition that metabolic syndrome, a cluster of cardiovascular risk factors including insulin resistance, dyslipidemia, obesity, and hypertension, is a predictor for both colorectal adenoma and CRC.[12] A recent meta-analysis also revealed that metabolic syndrome was associated with a 34% increase in the risk of colonic neoplasm (both CRC and colorectal adenoma).[13] For recurrent colorectal adenoma, metabolic syndrome and obesity were significantly associated with its development in Korean adult males.[14] A recent study in abstract form from Taiwan also found that metabolic syndrome is an independent risk factor for incident advanced adenoma after a "negative" colonoscopy.[15] In contrast to the two earlier reports, the current study demonstrated that metabolic syndrome was not a predictor of recurrent colorectal adenoma. The reason for the discrepancy among these three Asian studies is unclear. However, the difference in follow-up period may be a factor because a mean duration of 4.8 years follow-up was noted in the Korean study whereas 3.07 years

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was noted in the current one. A longer period of time may be required for the development and detection of recurrent adenoma among patients with metabolic syndrome. More studies are mandatory to clarify this issue.

In conclusion, it is important to identify the baseline parameters that are risk factors for adenoma findings on surveillance colonoscopy, to recognize high risk patients who need more vigilant surveillance colonoscopy, and to tailor guidelines in colonoscopy surveillance after polypectomy. Hypertension may be a potential predictive risk factor of recurrent colorectal adenoma in individuals that underwent polypectomy at baseline colonoscopy.

Conflicts of interest

The author declares that there are no conflicts of interest related to the subject matter or materials discussed in this article.

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