

学位論文の要旨

氏名 山之内 智志

学位論文名 Seasonal Variation in Occurrence of Ischemic Colitis
: a Retrospective Study

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著者名 Satoshi Yamanouchi, Sayaka Ogawa, Ryusaku Kusunoki,
Youichi Miyaoka, Hirofumi Fujishiro, Naruaki Kohge,
Yoshikazu Kinoshita

論文内容の要旨

INTRODUCTION

Ischemic colitis (IC) is the most common form of ischemic injury of the gastrointestinal tract. Many risk factors are reported for IC, including cerebrocardiovascular disease, hypertension, diabetes mellitus, past history of abdominal surgery, irritable bowel syndrome and constipation. Therefore, IC is generally found in elderly individuals with multiple comorbidities; however, it may also occur in young or middle-aged individuals. In routine clinical practice, in our experience, the number of patients admitted for IC seemed to be greater in the spring than in the winter. Therefore, we wanted to investigate the possible presence of seasonal variation in the occurrence of IC. Seasonal variation in disease incidence is a well-known phenomenon. Seasonal variation may also occur with other gastrointestinal diseases, especially during the winter, if their pathogenesis is related to a decreased blood supply. Thus, seasonal variation of IC may occur, but no such findings have been reported to date. We aimed to identify the clinical characteristics of IC and to determine whether there is a seasonal variation in the occurrence of IC.

MATERIALS AND METHODS

This was a retrospective study of the medical charts of patients who were admitted to the gastroenterology wards of Shimane Prefectural Central Hospital from January 2008 to December 2014. A total of 12,804 patients were admitted, and 368 of them had IC. The diagnosis of IC was confirmed by a typical medical history combined with the supporting colonoscopic, histopathological, and radiologic findings. The absence of antibiotic administration prior to the clinical diagnosis and a negative culture of stool specimens were mandatory for the diagnosis of IC. Weather parameters (monthly mean temperature, diurnal temperature difference, mean humidity, mean atmospheric pressure, daylight hours and precipitation) were obtained from the Japan Meteorological Agency. Seasons were defined as follows: winter (December-February); spring (March-May); summer (June-August); and fall (September-November). This study protocol (R14-086) was reviewed and approved by the Shimane Prefectural Central Hospital Ethical Committee and written informed consent was obtained from all subjects.

RESULTS AND DISCUSSION

A total of 368 patients with IC were investigated in the onset evaluation. Four cases that resulted from the administration of laxatives used for colonoscopic preparation were excluded from this study. Therefore, a total of 364 (89 male and 275 female) patients were enrolled in the seasonal onset evaluation. Throughout the year, there was no statistically significant variation in the number of patients hospitalized for the treatment of IC, although small peaks were found in March, June, and September to October ($P=0.642$). The number of patients with IC tended to be lower in November and December, without reaching a statistically significant level. The highest number of IC admissions occurred during the spring ($n=96$, 26.4%) followed by the summer ($n=93$, 25.5%), and autumn ($n=91$, 25.0%). The lowest number of IC admissions occurred during winter ($n=84$, 23.1%). There was no statistically significant difference in frequency of admissions between seasons. No statistically significant differences were found in the seasonal

occurrence of IC, even if male and female patients were analyzed separately. Because of many complex risk factors, the effect of seasonal environmental change on IC might not be clearly demonstrated.

In this study, 315 new-onset cases and 49 recurrent cases were enrolled. There was no significant difference in age, gender, form of disease, comorbidities, and drugs used at the time of IC occurrence between the initial and the recurrent cases. Twenty of 49 recurrent cases developed their initial events before the observation period of this study. The seasonal recurrence of IC was compared in the remaining 18 patients (29 events) who showed initial and recurrent events during the study period. The results showed that half of the recurrent cases developed recurrent IC in the same season as the initial event. The analysis of the recurrent cases with IC, however, suggested a possible role of seasonal environmental changes. In our study, 18 cases hospitalized multiple times for the treatment of IC were used to compare the seasonality of each event. These patients often developed IC in the same season. This suggested that seasonal factors may become clear in individual cases with certain vascular and intestinal factors. Therefore, patients with a history of IC may have a higher chance of developing recurrent IC in the same season in the future, although possible predictive factors suggesting future recurrence in the same season were not identified in this study.

CONCLUSION

Seasonal variation in hospital admissions due to IC were not clearly demonstrated in this study. IC recurs most frequently in the season in which the initial event occurred.