5-ASA IS NO USE FOR PREVENTION OF DIARRHEA DUE TO ACUTE RADIATION ENTERITIS

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ABSTRACT

Introduction: It was controversial that whether the use of 5-ASA was associated with a decrease in the incidence of diarrhea due to radiation therapy.

Materials and methods: A comprehensive search of several databases was carried out. A random-effect model was used to pool the data.

Results: Five randomized controlled trials were enrolled. Compared with placebo, the use of 5-ASA was not associated with a decrease in the incidence of diarrhea (OR= 0.97; 95% CI: 0.62, 1.52) or severe diarrhea (OR= 0.71; 95% CI: 0.19, 2.58)

Conclusion: 5-ASA did not decrease the incidence of diarrhea due to radiation therapy.

Keywords: 5-aminosalicylic acid, Radiation Enteritis, Diarrhea.

DOI: 10.19193/0393-6384_2017_3_057

Received October 30, 2016; Accepted January 02, 2017

Introduction

Acute radiation enteritis is a common side effect of radiation of abdominal or pelvic malignancies, which often occurs during or shortly after radiation therapy. Though the mechanisms of diarrhea after pelvic radiotherapy are incompletely understood, it was suggested that inflammation of the intestinal mucosa was an important pathophysiological factor. 5-aminosalicylate (5-ASA) as an anti-inflammatory drug has been tried for prevention of acute radiation enteritis in several studies(1-5). However, it was controversial that whether the use of 5-ASA was associated with a decrease in the incidence of diarrhea due to radiation therapy. To our best knowledge, this is the first quantitative review of the published data regarding clinical efficacy of 5-ASA for prevention of diarrhea due to radiation therapy in the literature.

Materials and methods

We searched Medline (via Pubmed), Embase databases from January 1985, to July 2016, for all randomized controlled trials that compared 5-ASA versus placebo for the prevention of diarrhea due to acute radiation enteritis. The analysis’ endpoint was to evaluate the incidence of diarrhea. The methodological quality of the trials included in this study was assessed by using the Jadad composite scale.

OR(Odds ratio) with 95% confidence intervals (CI) were extracted from papers and/or presentations. For each outcome, a fixed or random-effects model was used to pool the data according to the result of heterogeneity test. Heterogeneity between studies was evaluated by 2 tests and I-squared. Publication bias was assessed by Egger’s test and Begg’s test. A two-tailed P value less than 0.05 was considered to be significant in all analyses.
Results

Finally, 5 placebo-controlled double blind randomized controlled trials\(^{(1-5)}\) satisfied all of the inclusion criteria. There were 399 patients included in the meta-analysis, of whom 197 received 5-ASA and 202 were allocated to a control group. In methodological assessment, all trials scored 3 points or more on the Jadad scale.

The OR for each study and the corresponding confidence intervals for the total incidence of diarrhea due to radiation enteritis are shown in Figure 1. The pooled estimate for the incidence of diarrhea did not reach a statistically significance (OR= 0.97; 95% CI: 0.62, 1.52; P= 0.896; 5 studies\(^{(1-5)}\); I\(^2\)=51.6%). As to incidence of severe diarrhea (namely grade 3 and 4 diarrhea), 5-ASA was not associated with a statistically significant benefits as compared to placebo (OR= 0.71; 95% CI: 0.19, 2.58; P = 0.599; 4 studies (1-4); I\(^2\)= 80.4%) (Figure 2).

Conclusion

It should be emphasized that these findings showed marked heterogeneity and should be interpreted with caution. The heterogeneity may at least in part result from the fact that different individual trials included different primary malignancy and radiation dose. In conclusion, our study based on current evidence suggested that 5-ASA did not decrease the incidence of diarrhea due to radiation therapy.

References


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