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5-21-2021

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Adnan Malik MD

Hermant Goyal MD

Abhilash Perisetti MD

Parkview Health, abhilash.perisetti@gmail.com

Mahum Nadeem

Mahesh Gajendran

See next page for additional authors

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Recommended Citation

Malik, Adnan MD; Goyal, Hermant MD; Perisetti, Abhilash MD; Nadeem, Mahum; Gajendran, Mahesh; Enders, Gregory; Ali, Aman; and Tharian, Benjamin, "Fr247 BUDESONIDE VS. MESALAMINE IN MICROSCOPIC COLITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF EFFICACY AND ADVERSE EVENTS" (2021). *Other Specialties*. 23.

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Authors

Adnan Malik MD, Hermant Goyal MD, Abhilash Perisetti MD, Mahum Nadeem, Mahesh Gajendran, Gregory Enders, Aman Ali, and Benjamin Tharian

Budesonide vs. Mesalamine in Microscopic Colitis: A Systematic Review and Meta-analysis of Efficacy and Adverse Events

A Malik¹, H Goyal², A Perisetti³, M Nadeem⁴, M Gajendran⁵, A Ali⁶, B Tharian³, G Enders²

1. Medicine, Loyola University Health System, Villa park, IL, United States. 2. Wright Center for Graduate Medical Education, Scranton, PA, United States. 3. University of Arkansas for Medical Sciences, Little Rock, AR, United States. 4. Oklahoma University Medical Center, Oklahoma City, OK, United States. 5. Texas Tech University Health Sciences Center El Paso, El Paso, TX, United States.

Background

Microscopic colitis (MC) presents with chronic watery diarrhea, abdominal pain, cramping, bloating, nocturnal defecation, and occasional weight loss. The diagnosis is based on colonic tissue biopsy to reveal specific histological features. Several drugs, including mesalamine, budesonide, and other immunomodulators, are used for treating the disease process.

Aim

We aim to compare treatment efficacy and adverse events (AEs) of budesonide and mesalamine therapy in MC in this meta-analysis.

MATERIAL & METHODS

We searched the Cochrane Library, Scopus, Web of Science, and PubMed, comparing mesalamine or budesonide with a control group in the treatment of MC. Outcomes included clinical remission (three or fewer stools/day), stool characteristics (daily stool weight, daily stool frequency, daily stool consistency), and the number of patients with clinical response <50% in the disease activity. Safety endpoints included: Any AE-related discontinuation, including abdominal discomfort, constipation, flatulence, nausea, dizziness, headache, bronchitis, nasopharyngitis, and depression. The meta-analysis was conducted using the generic inverse variance method and performed a subgroup analysis based on the intervention.

RESULTS

Our literature search retrieved 19 randomized clinical trials with a total of 821 patients. Following results were reported after eight weeks of follow-up:

Remission Rates:

Budesonide showed significantly higher clinical remission rates RR = 2.29 [2.14, 2.45], than mesalamine RR = 1.7 [1.41, 2.05], which is statistically significant with a p=0.003. (figure B)

Adverse Events:

Significantly lower endpoint AE were reported with budesonide vs mesalamine (p=0.002) (Figure B)

Stool weight:

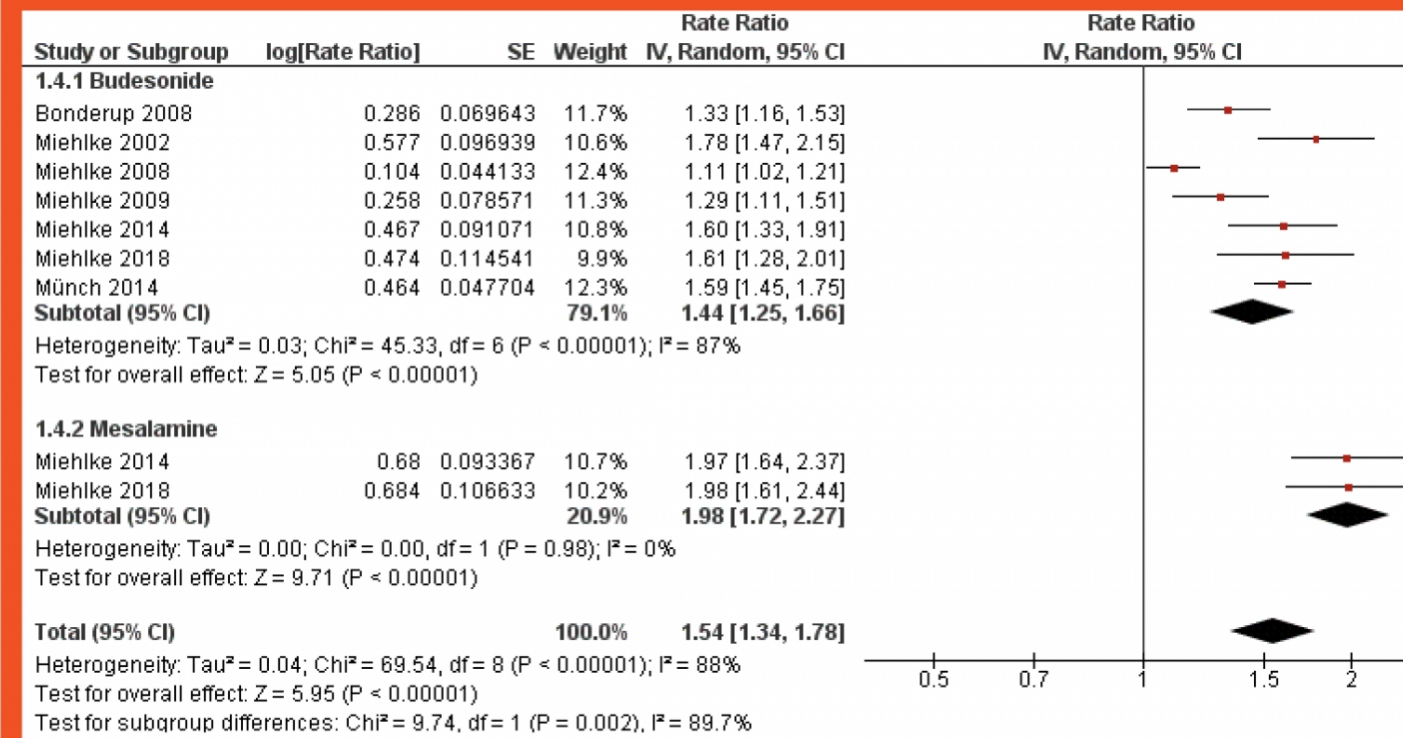
No difference in stool weight was seen in the budesonide group (MD = - 351.62 [-534.25, -168.99]) compared to mesalamine (MD=-104.3 [-372.34, 163.74]), p=0.14.

Stool Frequency:

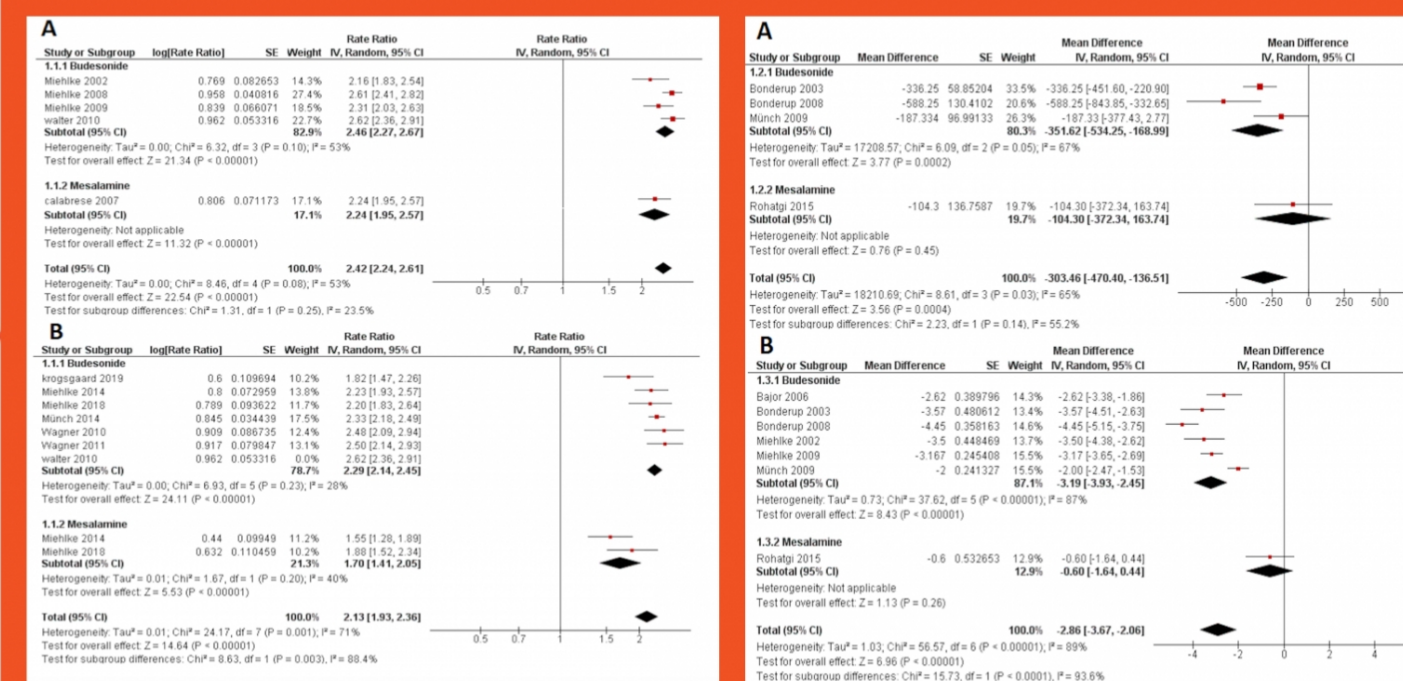
Daily stool frequency was found to significantly less in the budesonide group than mesalamine (p<0.001).

CONCLUSION

Treatment with budesonide was found to be better than mesalamine in microscopic colitis patients in terms of clinical remission rate (stool frequency), especially after eight weeks of follow up. Budesonide also showed a significantly lesser incidence of adverse events. There is a need for randomized, double-blinded clinical trials to provide direct evidence for our results.



(Figure A) Adverse Events



(Figure B) Clinical Remission

Figure C: Stool weight & Frequency