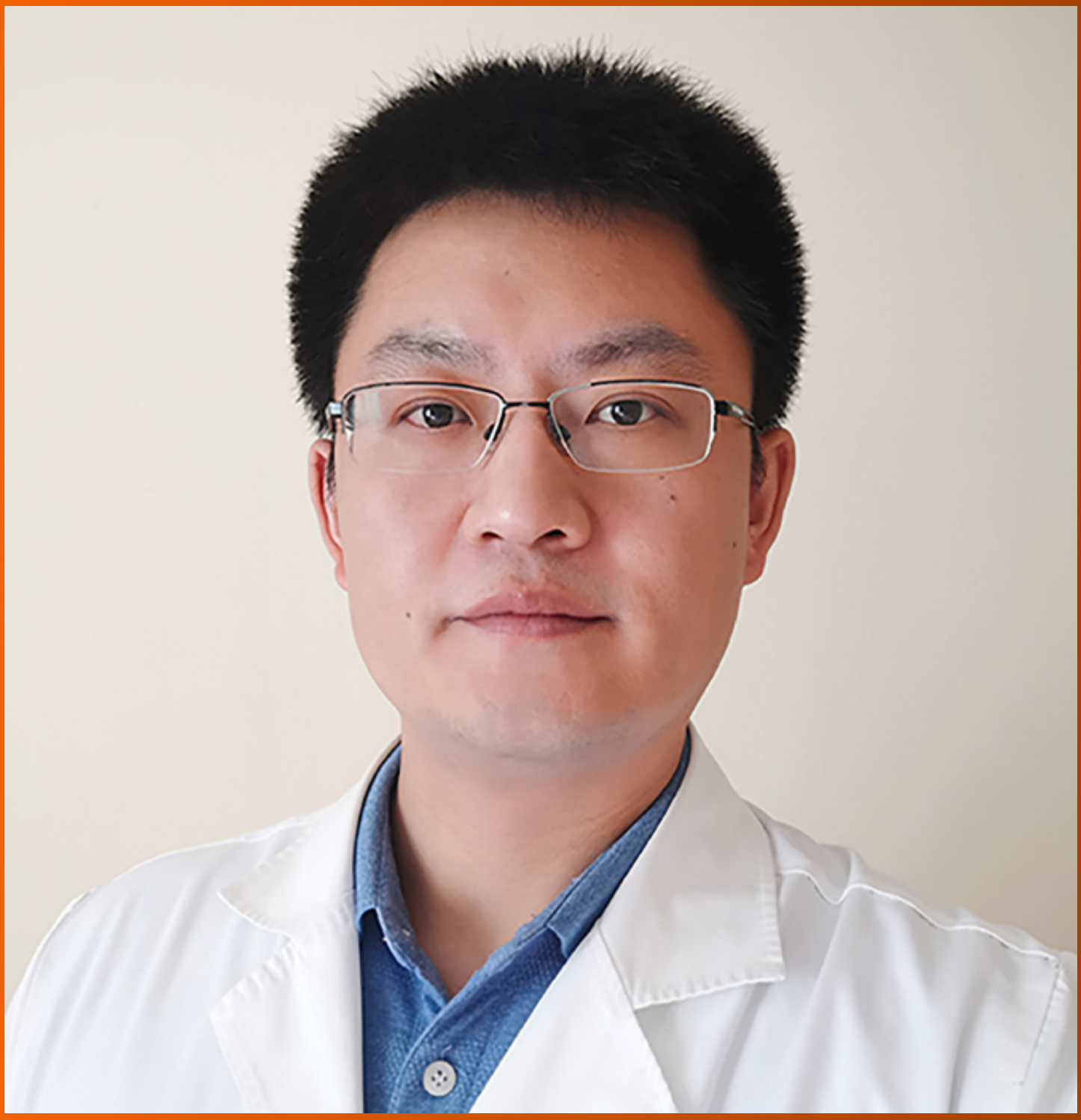
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ABOUT COVER

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WJD mainly publishes articles reporting research results and findings obtained in the field of dermatology and covering a wide range of topics including acneiform eruptions, acute generalized exanthematous pustulosis, angiolymphoid hyperplasia with eosinophilia, breast diseases, cutaneous fistula, dermatitis, dermatomyositis, erythema, exanthema, facial dermatoses, foot diseases, hair diseases, hand dermatoses, keratoacanthoma, keratosis, leg dermatoses, lipomatosis, lupus erythematosus, mastocytosis, morgellons disease, nail diseases *etc.*

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LETTER TO THE EDITOR

Fecal microbiota transplant for more than *Clostridioides difficile*: Dermatology a new frontier

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Author contributions: Snyder AM and Secrest AM coordinated Institutional Review Board approval and data access; Snyder AM, Jensen MK, and Secrest AM provided input in developing methods for the study; Abbott J collected data for this study and addressed the suitability of the data for analysis; Snyder AM drafted the manuscript. All authors were involved in the revision of the manuscript and gave approval for publication.

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Abstract

Fecal microbiota transplant (FMT) has quickly become popular in research not only for recurrent *Clostridioides difficile* infections but for other chronic conditions as well. Recent, small dermatologic studies have reported improvements in inflammatory skin conditions in individuals treated with FMT, but larger studies are needed to clarify this possible relationship between the skin and the gut microbiome. We conducted a single-center, retrospective chart review to assess changes in acne, dermatitis herpetiformis and/or celiac disease, eczema, and psoriasis. Due to the retrospective nature of this study and the limitations of the current electronic medical record, we were unable to adequately assess cases of these diseases in relation to FMT. However, this study informs us that improvements in retrospective data are needed to formally evaluate this possible association. The better, but more cumbersome, study design would be a prospective, observational study. We encourage others to pursue further interdepartmental research on the influence of the gut microbiome on inflammatory skin diseases.

Key Words: Fecal microbiota transplantation; Skin diseases; Dermatology; Retrospective; Clostridium difficile; Inflammation

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Core Tip: Future research investigating fecal microbiota transplant's potential role in treating dermatologic disease needs to focus on large interdisciplinary prospective studies in order to obtain the information needed for determining an association.

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TO THE EDITOR

Though we wish this letter could provide more answers than questions, we write to you to acknowledge a failure. Evidence has emerged that fecal microbiota transplant (FMT) can influence skin conditions and their treatments, as demonstrated by reports on alopecia universalis[1], psoriasis[2], acne[3], and melanoma immunotherapy[4]. Further, a case report describing a patient with celiac disease whose clinical symptoms disappeared after FMT[5] led to our curiosity in celiac disease and its skin disease cousin, dermatitis herpetiformis. We were thus inspired to conduct a retrospective chart review on all patients who received FMT at University of Utah (Institutional Review Board #76927) between January 2013 and December 2019. Our aim was to identify individuals diagnosed with inflammatory skin diseases (acne, dermatitis herpetiformis, eczema, and psoriasis) and/or celiac disease (with or without dermatitis herpetiformis) and look for any evidence of these conditions improving or going into remission after FMT. In total, 141 patients were identified as having undergone FMT (based on ICD-10-CM Diagnosis Code Z94.89), though it appeared only 140 went through with FMT based on what we could find in the electronic medical record. Among those who received FMT, most stool samples were administered *via* colonoscopy. Some patients received more than one FMT in the time frame of interest, though this did not appear to significantly affect dermatologic outcomes. Our sample included pediatric and adult patients, though most were adult. While 141 patients seemed an adequate number to identify patients for a case series, sadly, none of these individuals had consistent dermatologic data to suggest that FMT might alter gut microbiota sufficiently to impact these conditions.

Why should gastroenterologists who administer FMT care about inflammatory skin diseases? The skin microbiome's role in dermatologic disease has been given much attention, but the gut microbiome is now entering the spotlight in determining skin disease etiology and potential treatments. The studies previously mentioned stir curiosity as to how inflammatory skin diseases might be affected by the gut microbiome and use of FMT. There is much left to discover about the gut microbiome and how it interacts with other organ systems, but we must expand medical research beyond individual departments to further investigate the subject. Further, at our academic medical center, electronic medical records in their current state lack sufficient clinical information regarding pre- and post-FMT skin issues to explore this relationship rigorously. Future research needs to encourage interdepartmental collaboration and preferably should address the subject using a prospective observational study design.

To conclude, we encourage gastroenterologists administering FMT to assess potential effects FMT can have on their patients' skin diseases, especially inflammatory processes, and we welcome collaboration on a registry or multicenter cohort study for such work. If your patients develop an inflammatory skin disease or their skin disease changes after FMT, please note this in your charting and/or refer your patients to a dermatologist for follow-up. That FMT you administered may have just cured more than a *Clostridioides difficile* infection.

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