

Hidradenitis suppurativa and diet: A cross-sectional analysis of reddit and review of the literature

Maxwell Green¹, Aileen Feschuk², Manuel Valdebran^{3,4}

¹Tulane University School of Medicine, New Orleans, Louisiana, USA, ²Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada, ³Department of Dermatology and Dermatologic Surgery, Medical University of South Carolina, Charleston, South Carolina, USA, ⁴Department of Pediatrics, Medical University of South Carolina, Charleston, South Carolina, USA

Corresponding author: Maxwell Green, MPH, E-mail: Mgreen15@tulane.edu

Sir,

Hidradenitis Suppurativa (HS) is a chronic inflammatory skin condition involving painful nodules, abscesses and sinus tracts in the axilla and groin.¹ The incidence of HS likely ranges from 0.0033%-4.1% of the population with African-American females of childbearing ages being disproportionately affected [1]. Additionally, multiple large scale systematic reviews/meta-analyses have found that HS is significantly associated with an increased prevalence of metabolic disorders [2]. Diagnosis is often made clinically with topical or oral antibiotics typically being first-line treatment, but other options include hormonal therapies, immunomodulatory agents (e.g., systemic steroids, tumor necrosis factor inhibitors), or surgery [1].

HS can have a significant impact on quality of life, and patients often seek HS information on social media [3]. A popular topic on social media is the impact of diet on HS. Thus, the goal of this cross-sectional analysis was to classify Reddit posts related to flares of HS related to specific elements of the diet and review current literature.

A literature search using PubMed, Embase and Web of Science was performed using the terms (“hidradenitis suppurativa” OR “acne inversa”) AND (“diet” OR “food”) in May of 2023. Dietary interventions specifically implemented for weight loss or diabetes management were excluded, as these associations have previously been well documented.² Additionally, the latest 1000 posts in the Reddit subgroup “Hidradenitis” (the largest reddit HS subgroup) were reviewed.

Fifteen studies were included (Table 1). HS patients showed lower serum levels of ferritin and zinc and lower intake of dietary calcium, zinc and Vitamin D. Following caloric and carbohydrate restriction through commercial diets, 447/883 HS patients showed subjective disease improvement (n=2 studies, 56%). Furthermore, two studies showed lower adherence to Mediterranean diet in HS patients compared to controls, and one study showed lower self-reported HS severity in patients adhering more strictly to this diet. Additional studies showed clinical improvement in HS after fasting (n=1 study), dairy exclusion (n=1 study), and implementation of yeast-exclusion diets (n=2 studies).

Across the latest 1000 posts within the “Hidradenitis” Reddit subgroup, 46 were related to diet (4.6%), with the most implicated topics being “sugar” (n=6/46, 13.0%) and “dairy” (n=5/46, 10.9%). Cross-sectional analysis results are summarized in Table 2.

Many triggers have been linked to HS. Higher levels of insulin/insulin resistance are linked to increased inflammatory gene expression and thus explain how carbohydrates may be connected to HS flares and fasting may improve the condition [2]. Casein found in dairy elevates insulin levels, and active 5-alpha reductases in dietary products can elevate androgen levels, further contributing to HS progression [4]. Reasons for reported success of a yeast-exclusion diet, which completely excludes foods such as beer and baked-goods, is unknown, but it has been hypothesized that a subset of HS patients have an increased

How to cite this article: Green M, Feschuk A, Valdebran M. Hidradenitis suppurativa and diet: A cross-sectional analysis of reddit and review of the literature. Our Dermatol Online. 2024;15(3):312-313.

Submission: 16.02.2024; **Acceptance:** 14.05.2024

DOI: 10.7241/ourd.20243.22

Table 1: Studies Examining Diet in HS (N=15 studies)

Dietary Category	Number of Studies (n=participant count)	Results
Vitamin Levels	N=3	
Iron Levels	N=1 (74 HS, 44 controls)	Lower ferritin, T _{sat} , and hepcidin in HS compared to controls*
Zinc Levels	N=1 (122 HS, 122 controls)	Lower zinc levels more (<83.3) in HS patients (OR 6.7); Low zinc associated with Hurley Stage 3 (OR 4.4)
Calcium, Vitamin D, and Zinc Intake	N=1 (40 HS, 40 controls)	Lower calcium, zinc, and Vitamin D intake
Dietary Intervention (Atkins, Paleo, etc.)	N=2 1. 591 HS 2. 242 HS	53.6% of patients noticed subjective improvement in HS with a dietary intervention (n=447/883)
Mediterranean Diet	N=3 1. 221 HS 2. 41 HS, 41 controls 3. 35 HS, 35 controls	1. Decreased self-reported HS severity and IHS4 score in those with increased self-reported MD adherence; use of EVOO associated with lowest disease severity (p<0.05) 2. Lower adherence to MD in HS patients compared to controls (p<0.001)* 3. Lower adherence to MD in HS patients compared to controls (p<0.001)
Triggers	N=3 (2369 HS)	Most common trigger across survey was sugar/carbs (n=837/2369, 35.3%)
Fasting	N=1 (55 HS)	IHS4 score significantly decreased in patients after Ramadan fasting while controlling for weight (p<0.001)
Yeast-exclusion	N=2 12 HS patients with IgG to anti-saccharomyces cerevisiae 37 HS patients	12/12 with clinical stabilization and disease regression within 12 months of treatment; 12/12 with flare following ingestion of yeast product 26/37 showed clinical improvement with diet alone; 32/37 had flares when ingesting yeast product
Dairy	N=1 (57 HS)	47 (83%) of patients showed clinical improvement with dairy avoidance over 6 months

*=No association with variable and HS severity

Table 2: Analysis of Recent Reddit Posts Related to Dietary Intervention in HS (n=1000 posts)

Type of Reddit Entry	
Post=46 (4.6%)	Pesticides=1 (2.2%), Nightshades=2 (4.3%), Yeast=2 (4.3%), Alcohol=2 (4.3%), Fasting=4 (8.7%), Gluten/carbs=4 (8.7%), Dairy=5 (10.9%), Sugar=6 (13.0%)
Comment=106	Alcohol=6 (5.7%), Fasting=15 (14.2%), Yeast=20 (18.9%), Gluten/carbs=23 (21.7%), Dairy=25 (23.6%), Sugar=26 (24.5%), Nightshades=27 (25.5%)

sensitivity to *Saccharomyces cerevisiae* in yeast and create pro-inflammatory immunoglobulins in response [5].

These results indicate that HS patients rely heavily on social media support. Clinicians must be aware of the discourse taking place to properly counsel patients on diet, potentially aimed at lowering insulin resistance, as this is currently the only well-evidenced dietary-related HS risk factor [2].

Statement of Human and Animal Rights

All the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the 2008 revision of the Declaration of Helsinki of 1975.

Statement of Informed Consent

Informed consent for participation in this study was obtained from all patients.

REFERENCES

- Goldburg SR, Strober BE, Payette MJ. Hidradenitis suppurativa: Epidemiology, clinical presentation, and pathogenesis. *J Am Acad Dermatol.* 2020;82:1045-58.
- Garg A, Birabakaran M, Strunk A. Prevalence of type 2 diabetes mellitus among patients with hidradenitis suppurativa in the United States. *J Am Acad Dermatol.* 2018;79:71-6.
- Yesantharao LV, Suresh R, Lerman SF, Cox C, Caffrey J. Hidradenitis suppurativa reddit support group: finding new meaning in social media during the COVID-19 pandemic. *J Burn Care Res.* 2023;44:373-80.
- Eiken HC, Holm JG, Thomsen SF. Studies on the role of diet in the management of hidradenitis suppurativa are needed. *J Am Acad Dermatol.* 2020;82:e137-8.
- About C, Zamaria N, Cannistrà C. Treatment of hidradenitis suppurativa: Surgery and yeast (*Saccharomyces cerevisiae*)-exclusion diet. Results after 6 years. *Surgery.* 2020;167:1012-5.

Copyright by Maxwell Green, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source of Support: This article has no funding source.

Conflict of Interest: The authors have no conflict of interest to declare.