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Risk of Serious Infection With Adalimumab in Hidradenitis Suppurativa Compared With Psoriasis

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IMPORTANCE Previous research suggests that patients with hidradenitis suppurativa (HS) may face a higher risk of serious infections compared with those with psoriasis. However, these studies are subject to limitations that could constrain their reliability.

OBJECTIVE To compare the risk of hospitalization from noncutaneous infections, infection profiles, and the length of stay (LOS) of adult patients with HS and psoriasis treated with adalimumab.

DESIGN, SETTING, AND PARTICIPANTS This retrospective cohort study was conducted using deidentified claims data from the MarketScan database. All adult patients with HS or psoriasis who initiated adalimumab therapy between January 2017 and December 2020 were included. Data were analyzed from October 2023 to March 2024.

EXPOSURES New users of adalimumab diagnosed with psoriasis or HS, identified using *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* codes and adalimumab prescriptions.

MAIN OUTCOMES AND MEASURES The primary outcome was hospitalization from noncutaneous infections in a time-to-event analysis using inverse probability weighting to account for confounders in the Cox regression models. Secondary outcomes included the infection types compared using incidence rate ratios and LOS analyzed with multivariable Poisson regression.

RESULTS Of 10 349 included patients, 5641 (54.5%) were female, and the mean (SD) age was 44.8 (12.8) years. The cohort included 1650 patients with HS and 8699 with psoriasis. The HS cohort was younger (mean [SD] age, 36.2 [11.5] years vs 46.5 [12.4] years) and predominantly female (1271 [77.0%] vs 4370 [50.2%]), with higher rates of obesity, Crohn disease, anxiety, and depression. The weighted Cox analysis indicated an increased risk of serious infection in patients with HS (hazard ratio, 1.53; 95% CI, 1.34-1.86). This group also had a higher likelihood of sepsis and genitourinary infections (sepsis: incidence rate ratio, 2.07; 95% CI, 1.35-3.12; genitourinary infections: incidence rate ratio, 2.22; 95% CI, 1.22-3.86) and greater odds of prolonged LOS (odds ratio, 1.28; 95% CI, 1.13-1.45) compared with the psoriasis cohort.

CONCLUSIONS AND RELEVANCE In this cohort study, among adults treated with adalimumab, those with moderate to severe HS had an elevated risk of infection and different infection profiles compared with those with psoriasis. Future research should focus on the impacts of disease severity and treatment regimens on infection risk and develop targeted prevention strategies.

Supplemental content

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Hidradenitis suppurativa (HS) is a chronic, debilitating inflammatory skin disorder that affects intertriginous regions. It presents as painful nodules, abscesses, fistulous tracks, and severe scarring. Despite a reported prevalence of approximately 1% in European and North American populations, actual figures may be higher due to frequent misdiagnosis.[1] HS also carries a substantial comorbidity burden and profoundly impacts quality of life, which correlates with disease severity.[2]

Biological therapies have been increasingly approved for the treatment of HS in the past decade. From 2015 to 2023, adalimumab, a tumor necrosis factor-α inhibitor, was the sole therapy for HS approved by the US Food and Drug Administration (FDA).[3] However, it has been reported as an independent risk factor for infections in psoriasis.[4,5] Moreover, chronic inflammatory dermatological conditions, including psoriasis, have an elevated risk of systemic infections independent of therapy, and early evidence suggests this risk is even higher in HS.[6,7] In 2023, the first infectious disease screening guideline tailored specifically to HS by a Delphi study was developed; however, it focuses only on reactivations and exacerbations in the setting of immunomodulatory therapy.[8] Therefore, guidance on the monitoring of secondary infectious diseases remains derived from patient experiences with psoriasis and clinical trials with inherent limitations in follow-up duration and participant selection.

Emerging research has indicated a higher prevalence of systemic infections in HS compared with patients with psoriasis and the general population.[9] However, this study was cross-sectional and relied on an inpatient database, limiting adjustment for individual risk factors and risking overestimation through misclassification of HS flares as cutaneous infection. Therefore, our study aims to compare the risk of hospitalization from noncutaneous infections (NCIs), the infection profiles, and the length of stay for these infections between HS and psoriasis, thus providing a more focused evaluation of the HS-specific infection burden.

Key Points

Question Is the risk of serious infection different between adalimumab users with hidradenitis suppurativa (HS) and psoriasis?

Findings In this cohort study of 10 349 new adalimumab users, including 1650 with HS and 8699 with psoriasis, the risk of hospitalization due to noncutaneous infections was higher in those with HS, even after adjusting for confounders. Additionally, patients with HS also had a greater likelihood of developing sepsis and genitourinary infections.

Meaning These results underscore the need for strategies to reduce the infection risk in the HS population.

Methods

Study Design and Data Source

In this retrospective cohort study, we compared the risk of hospitalization from NCI between new adalimumab users with psoriasis or HS in MarketScan (Merative), a US-based administrative claims database, from January 1, 2017, to December 31, 2020. MarketScan contains deidentified longitudinal medical information of individuals from every US state and roughly 25% of individuals with employer-sponsored insurance in addition to Medicare, a federally funded insurance that covers nearly all legal US residents 65 years and older, and is Health Insurance Portability and Accountability Act compliant. The Mass General Brigham institutional review board determined that this study was exempt from oversight. This study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.[10]

Study Population and Exposure

We identified adult patients 18 years and older with an outpatient diagnosis of either psoriasis or HS, who were also initiating treatment with adalimumab. Exposure definition relied on the presence of an *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* (*ICD-10*) code for psoriasis or HS as well as a prescription for adalimumab. This algorithm has been validated for psoriasis with a positive predictive value of 78.4%.[11] For HS, an algorithm using only the *ICD-10* codes showed a positive predictive value of 64.9%.[12] The exposure *ICD-10* codes were verified within 120 days prior to the first adalimumab pharmacy dispensing. Cohort entry date was defined by initial adalimumab dispensing date. Individuals were required to have continuous enrollment during the baseline period of 120 days prior to cohort entry. Those with less than 2 months of consecutive treatment with adalimumab or a diagnosis of both HS and psoriasis were excluded. Participants were followed up from the first adalimumab pharmacy dispensing date (cohort entry), continuing until the earliest of NCI hospitalization, administrative end (December 31, 2020), or loss of coverage. Similar to an intention-to-treat analysis, patients remained in the analysis after drug discontinuation.

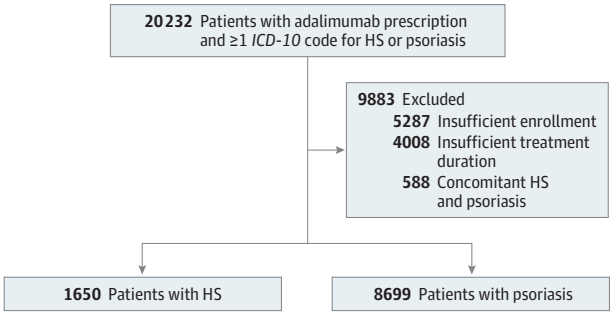
Outcome Definition

Our primary outcome was the first occurrence after the cohort entry date of hospitalization from NCI. The analysis did not include cutaneous infections to mitigate potential misclassification bias associated with HS flares and cutaneous infections, which often have significant clinical overlap. NCIs were identified through previously validated algorithms or *ICD-10* codes within the patient's discharge diagnosis.[13,14] Secondary outcomes included the infection types and length of hospital stay, defined as the number of days hospitalized for NCI, which has been correlated with the severity of illness in previous studies.[15] Infections were grouped as nervous system, pulmonary, COVID-19, gastrointestinal tract, eyes-ear-mouth-throat, musculoskeletal, genitourinary, sepsis, and other.

Covariates

During the 120-day baseline period prior to cohort entry, we evaluated preselected covariates potentially associated with the development or severity of an infection. Demographic information included age at cohort entry, sex, and geographic

Figure 1. Flowchart of Cohort Selection



HS indicates hidradenitis suppurativa; *ICD-10, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision*.

region. Race and ethnicity data were not available. The comorbidities included HIV, cancer, organ transplant, hypertension, diabetes, dyslipidemia, obesity, heart disease (heart failure or coronary heart disease), Crohn disease, ulcerative colitis asthma, pulmonary disease (chronic obstructive pulmonary disorder or asthma), chronic kidney disease, anxiety, and depression. We also calculated the Charlson Comorbidity Index (CCI), a validated method to predict the 1-year risk of death.[16] For enhanced analytical robustness, we categorized the CCI for descriptive purposes and also treated it as a continuous variable within regression models.

Statistical Analysis

Descriptive statistics compared the population baseline characteristics of those with psoriasis with those with HS. Categorical variables were compared using χ^2 test, while continuous variables were compared with *t* tests for normally distributed variables and Wilcoxon rank sum tests for nonnormal variables. All statistical analyses were conducted using R Studio software version 2024.12 (Posit), setting 2-tailed α values and confidence intervals at .05 and 95%, respectively. Data were analyzed from October 2023 to March 2024.

Incidence rates (IRs) were defined as hospitalization from NCI and reported in terms of 1000 person-years. IR ratios (IRRs) compared the IR between groups. Inverse probability weighting (IPW) was used to adjust for confounding. A multivariable logistic model estimated patients' propensity scores. The propensity score represents the predicted probability of exposure, in this case, the diagnosis of HS or psoriasis, conditional on the confounders included in our model: age, sex, hypertension, diabetes, dyslipidemia, obesity, heart disease, chronic kidney disease, spondyloarthropathies, Crohn disease, ulcerative colitis, lung disease, anxiety, depression, and CCI score. Stabilized weights derived from the propensity score model were then applied, and the balance in baseline covariates was compared with standardized differences before and after weighting.

The time to hospitalization from NCI was evaluated using a Cox proportional hazards model within this weighted cohort. Confidence intervals were refined through bootstrapping to ensure accuracy. Compliance with the Cox proportional hazard assumption was confirmed with both the visual inspection of the log-log curves and the Schoenfeld residuals.

The secondary outcome of length of hospital stay was described with means and SDs. Its association with the diagnosis of HS was tested through a multivariable Poisson regression model in the unweighted population. Age, sex, and CCI score were included as covariates in the model to adjust for confounding.

Sensitivity Analysis

We performed 5 sensitivity analyses to test the robustness of our assumptions. First, to test the accuracy of our exposure definition, we identified patients with HS and psoriasis using 2 *ICD-10* codes within the baseline period, as opposed to the original single-code approach. Second, we extended the baseline period from 4 to 6 months to determine whether a shorter baseline could potentially affect the ability to accurately capture data on confounders. Third, instead of using all the discharge diagnoses available, we use half of them to identify serious NCI. Fourth, to address the possibility of immortal time bias, we eliminated the requirement for a minimum of 2 months of continuous adalimumab treatment. Fifth, we included the same covariates used in the propensity score model in a traditional Cox regression model without IPW to compare the effects of different analytical approaches.

Results

We identified 20 232 adult patients initiating adalimumab therapy with a diagnosis of HS or psoriasis. Of those, 5287 patients were excluded due to inadequate enrollment, 4008 for insufficient treatment duration, and 588 with both diagnoses. Consequently, our final cohort consisted of 10 349 patients; 5641 (54.5%) were female, and the mean (SD) age was 44.8 (12.8) years. A total of 1650 individuals had HS and 8699 had psoriasis (**Figure 1**).

The HS group was younger (mean [SD] age, 36.2 [11.5] years vs 46.5 [12.4] years; $P < .001$) and predominantly female (1271 [77.0%] vs 4370 [50.2%]; $P < .001$). Patients with HS were more likely to have a diagnosis of obesity, Crohn disease, anxiety, and depression. In terms of CCI scores, patients with HS were more likely to have a score of 0 (1134 [68.7%] vs 3934 [45.2%]). Additionally, the median (IQR) time of adalimumab treatment for both groups was similar (0.67 [0.45-1.13] years vs 0.69 [0.46-1.13] years; $P = .20$). The median (IQR) time of follow-up was shorter in the HS group (1.01 [0.47-1.73] years vs 1.29 [0.61-2.20] years; $P < .001$) (**Table 1**).

Risk of Hospitalization for NCI

In our cohort, a total of 373 patients were hospitalized for NCI during a maximum follow-up of 3.6 years. In the HS group, 73 hospitalizations were recorded, with a median (IQR) time to event of 0.75 (0.35-1.15) years, corresponding to an IR of 36.5 cases per 1000 person-years (95% CI, 28.6-45.9). Meanwhile, in the psoriasis group, there were 300 hospitalizations, with a median (IQR) time to event of 0.78 (0.37-1.38) years and

Table 1. Demographic and Clinical Characteristics of Included Patients

Characteristic	No. (%)		P value
	Psoriasis (n = 8699)	Hidradenitis suppurativa (n = 1650)	
Age, mean (SD), y	46.5 (12.4)	36.2 (11.5)	<.001
Sex			
Female	4370 (50.2)	1271 (77.0)	<.001
Male	4329 (49.8)	379 (23.0)	
Region			
Northeast	1146 (13.2)	173 (10.5)	<.001
North central	1855 (21.3)	263 (15.9)	
South	4553 (52.3)	1038 (62.9)	
West	1125 (12.9)	173 (10.5)	
Unknown	20 (0.2)	3 (0.2)	
Duration of adalimumab treatment, median (IQR), y	0.69 (0.46-1.13)	0.67 (0.45-1.13)	.20[a]
Duration of follow-up, median (IQR), y	1.29 (0.61-2.20)	1.01 (0.47-1.73)	<.001[a]
Comorbidities			
HIV	18 (0.2)	5 (0.3)	.64
Malignancy	129 (1.5)	24 (1.5)	>.99
Hypertension	976 (11.2)	154 (9.3)	.03
Diabetes	755 (8.7)	143 (8.7)	>.99
Dyslipidemia	523 (6.0)	47 (2.8)	<.001
Obesity	135 (1.6)	68 (4.1)	<.001
Heart failure	21 (0.2)	5 (0.3)	.85
Coronary heart disease	128 (1.5)	9 (0.5)	.004
Chronic kidney disease	37 (0.4)	11 (0.7)	.26
Spondyloarthropathies	128 (1.5)	18 (1.1)	.28
Crohn disease	90 (1.0)	32 (1.9)	.003
Ulcerative colitis	62 (0.7)	19 (1.2)	.09
Asthma	133 (1.5)	22 (1.3)	.63
COPD	63 (0.7)	13 (0.8)	.90
Anxiety	320 (3.7)	90 (5.5)	.001
Depression	291 (3.3)	102 (6.2)	<.001
Charlson Comorbidity Index score			
0	3934 (45.2)	1134 (68.7)	<.001
1-2	3797 (43.6)	403 (24.4)	
3-4	770 (8.9)	80 (4.8)	
≥5	198 (2.3)	33 (2.0)	

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] *P* value was calculated with Wilcoxon rank-sum test.

an IR of 23.4 cases per 1000 person-years (95% CI, 20.8-26.2). The overall unadjusted incidence of infection in the HS group was higher than in the psoriasis group (IRR, 1.56; 95% CI, 1.38-1.79).

To adjust for confounders, we performed IPW. The baseline characteristics of the derived pseudopopulation were well-balanced, exhibiting standardized mean differences of less than 0.1 between the HS and psoriasis cohorts (eFigure in Supplement 1). Our weighted outcome analysis revealed that patients with HS had 1.53-fold the hazard of hospitalization for NCI compared with those with psoriasis (hazard ratio [HR], 1.53; 95% CI, 1.34-1.86) (**Figure 2**).

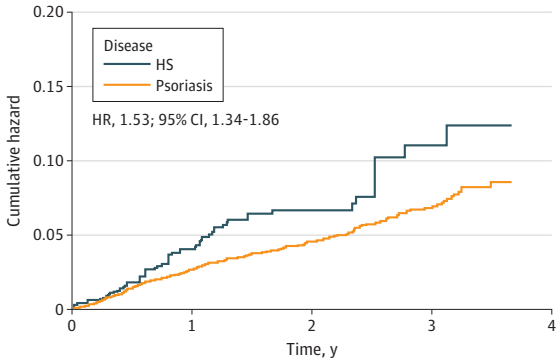
Comparison of Infections

In our cohort, the infections with the highest IR among individuals with HS were sepsis (IR, 16.02 per 1000 person-years; 95% CI, 10.96-22.62), genitourinary tract (IR, 9.01; 95% CI, 5.34-14.24), and lower respiratory tract (IR, 8.01; 95% CI, 4.58-13.01). In contrast, the psoriasis group predominantly experienced lower respiratory tract infections (IR, 8.35; 95% CI, 6.84-10.09), sepsis (IR, 7.72; 95% CI, 6.28-9.40), and gastrointestinal infections (IR, 6.79; 95% CI, 5.44-8.37). Notably, sepsis and genitourinary tract infection were more than 2-fold more likely to occur in patients with HS compared with those with psoriasis (sepsis: IRR, 2.07; 95% CI, 1.35-3.12; genitourinary tract infection: IRR, 2.22; 95% CI, 1.22-3.86) (**Table 2**).

Length of Hospital Stay

The mean (SD) duration of a hospital stay in the HS group was similar compared with the psoriasis group (5.19 [3.05] days vs 4.93 [2.91] days; *P* = .66). In the regression model adjusted for age, sex, and CCI score, patients with HS had greater odds of a longer length of stay compared with those

Figure 2. Cumulative Hazard Curve of Hospitalization Due to Noncutaneous Infections in the Weighted Population Between the Hidradenitis Suppurativa (HS) and Psoriasis Cohorts



The steeper ascent and separation of the HS line from the psoriasis line indicate a higher cumulative hazard of noncutaneous infection–related hospitalization in patients with HS, summarized by the weighted hazard ratio (HR).

with psoriasis (odds ratio, 1.28; 95% CI, 1.13-1.45) (eTable in Supplement 1).

Sensitivity Analysis

The results from all 5 sensitivity analyses were similar and compatible with the primary analysis (**Figure 3**). Specifically, patients with HS had higher risk of hospitalization from NCI under each of the following conditions: 2 *ICD-10* codes for exposure definition (HR, 1.63; 95% CI, 1.51-2.17), longer baseline period (HR, 1.53; 95% CI, 1.34-1.86), restricted discharge diagnosis (HR, 1.75; 95% CI, 1.37-1.97), no minimum adalimumab therapy (HR, 1.66; 95% CI, 1.45-1.93), and unweighted cox regression (HR, 1.52; 95% CI, 1.15-2.02).

Discussion

Infections are a common cause of hospitalization among patients with HS. In this study, among those newly initiating adalimumab, we found that individuals with HS had a significantly elevated risk of hospitalization due to NCI compared with those with psoriasis, even after adjusting for risk factors for infection. In particular, rates of sepsis and genitourinary tract infections were significantly higher in individuals with HS. Moreover, once hospitalized, patients with HS had a 28% increase in the likelihood of experiencing longer stays compared with their counterparts with psoriasis after adjusting for CCI, age, and sex; however, this difference may not be clinically significant since both groups had similar lengths of hospitalization. These outcomes highlight the substantial burden infections impose on the HS population.

The landscape of infection risk among patients with HS, while previously explored, remains insufficiently delineated. A meta-analysis of phase 2 and 3 trials found no increased risk of infection in patients with HS taking immunomodulatory therapy; however, these findings might be limited by the short follow-up of clinical trials.[17] Other studies identified infections as the most common cause of hospitalization and inpatient death.[18] Lee et al[9] further corroborated the elevated prevalence of infections in inpatients with HS relative to those without HS and those with psoriasis. However, much of the existing research relies on the National Inpatient Sample, an inpatient health care database from the US. While the National Inpatient Sample offers extensive coverage of the inpatient demographic, it has many limitations when studying chronic disease, which are mainly seen in an outpatient setting. Key among these are the absence of validated diagnosis, insufficient patient data granularity, and the absence of the population at risk. Moreover, the inclusion of cutaneous infections may lead to an overestimation of infection rates, as these are frequently misclassified as HS flares due to similar clinical presentation, especially in acute care settings.

This study found high rates of sepsis and genitourinary tract infections among patients with HS, more than 2-fold higher compared with those with psoriasis. Furthermore, the distribution of infection types varied between the 2 groups. Patients with HS demonstrated the highest incidences of genitourinary tract infections (eg, acute cystitis, pyelonephritis, urinary tract infection, site not specified), followed by lower respiratory and gastrointestinal infections. Conversely, the psoriasis cohort most commonly presented with lower respiratory infections, with gastrointestinal tract infections being the second most common and genitourinary tract infections ranking third in terms of frequency. In a large population-based study from the UK, Takeshita et al[6] also found that lower respiratory tract infection was the most common serious infection in the general population and patients with psoriasis. *ICD-10* coding for sepsis is highly specific (91%), thereby limiting false-positive classifications.[19] However, this performance may be reduced in HS, as disease flares often present with systemic inflammatory signs—such as leukocytosis and tachycardia—that can mimic sepsis.[20,21] A recent medical record review study of an HS cohort reported that most sepsis-coded admissions were attributable to an underlying NCI.[22] New studies with clinical adjudication are needed to elucidate the incidence of sepsis in HS.

Adalimumab was the first FDA-approved therapy for HS, approved in 2015. It was also approved for the treatment of psoriatic arthritis in 2005 and for plaque psoriasis in 2008. The increased risk of serious infections among patients with psoriasis compared with the general population is well-documented and is reported to increase with disease severity.[6,7] Additionally, adalimumab has been associated with an increased risk of serious infections compared with nonbiological therapies in psoriasis.[4]

Our study found that among adalimumab users, patients with HS had a 53% higher risk of hospitalization from NCI compared with patients with psoriasis. Our analytical framework was designed to adjust for the immunomodulatory impact of standard therapies and the potential contribution of disease severity to infection risk. The findings thereby suggest an increased, inherently higher baseline risk of severe infections in the HS population. It is crucial to acknowledge, however, that the homogenization of adalimumab therapy in this analysis provides only a partial control for medication effects. This may

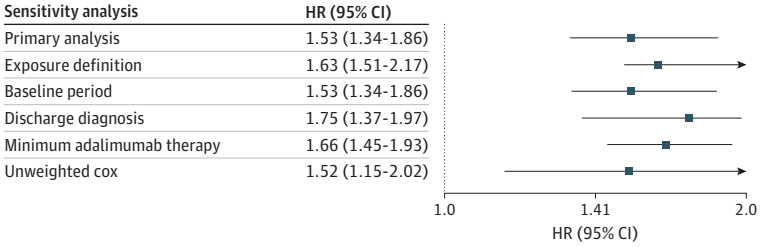
Table 2. Comparative Incidence Rates of Infection in Patients With Hidradenitis Suppurativa (HS) vs Psoriasis Taking Adalimumab

Infection	Patients with HS		Patients with psoriasis		Incidence rate ratio (95% CI)
	Events, No. (%)	Incidence rate per 1000 person-years (95% CI)	Events, No. (%)	Incidence rate per 1000 person-years (95% CI)	
Overall	73 (100)	36.55 (28.65-45.95)	300 (100)	23.40 (20.83-26.20)	1.56 (1.19-2.02)
Sepsis	32 (44)	16.02 (10.96-22.62)	99 (33)	7.72 (6.28-9.40)	2.07 (1.35-3.12)
Genitourinary tract	18 (25)	9.01 (5.34-14.24)	52 (17)	4.06 (3.03-5.32)	2.22 (1.22-3.86)
Low respiratory	16 (22)	8.01 (4.58-13.01)	107 (36)	8.35 (6.84-10.09)	0.96 (0.53-1.63)
Gastrointestinal tract	9 (12)	4.51 (2.06-8.55)	87 (29)	6.79 (5.44-8.37)	0.66 (0.29-1.32)
COVID-19	5 (7)	2.50 (0.81-5.84)	26 (9)	2.03 (1.32-2.97)	1.23 (0.37-3.27)
Viral	4 (5)	2.00 (0.55-5.13)	16 (5)	1.25 (0.71-2.03)	1.60 (0.39-4.97)
EEMT	3 (4)	1.50 (0.31-4.39)	27 (9)	2.11 (1.39-3.06)	0.71 (0.14-2.32)
Nervous system	1 (1)	0.50 (0.01-2.79)	5 (2)	0.39 (0.13-0.91)	0.95 (0.02-8.53)
Cardiovascular	1 (1)	0.50 (0.01-2.79)	5 (2)	0.39 (0.13-0.91)	1.28 (0.03-11.47)
Musculoskeletal	0	NA	14 (5)	1.09 (0.60-1.83)	NA
Other[a]	4 (5)	2.00 (0.55-5.13)	10 (3)	0.78 (0.37-1.43)	2.57 (0.598.90)

Abbreviations: EEMT, eye, ear, mouth and throat; NA, not applicable.

[a] Includes parasitosis, unspecified infectious diseases, gangrene, and pathogens without specified infection site.

Figure 3. Forest Plot of the Sensitivity Analysis



HR indicates hazard ratio.

be due to the higher dosages prescribed for patients with HS compared with psoriasis, which may influence the observed disparity in infection risk. The phase 2 trial results for HS and psoriasis regarding a potential dose-dependent effect on infections are inconsistent. In the HS trial, the biweekly adalimumab dose resulted in a higher infection rate (42.3%) compared with the weekly dose (33.3%).[23] Conversely, in psoriasis, the biweekly dose (17.7%) led to fewer infections than the weekly regimen (28%).[24] Patients with HS may also receive short courses of systemic steroids for flares and adjuvant systemic antibiotics, which could impact their risk of infection.

Long-term antibiotic use has been linked to higher rates of upper respiratory and urinary tract infection in acne and to *Clostridioides* (formerly *Clostridium*) *difficile* colitis in HS.[25,26] Although gastrointestinal tract infection rates were lower in our HS cohort than in psoriasis and steroid doses are intended to be anti-inflammatory rather than immunosuppressive, these medications can impact the infection risk.

Baseline imbalances in demographic characteristics and comorbidities were mitigated by IPW in the statistical analysis. Nevertheless, individuals with HS had shorter follow-up times than those with psoriasis. Two factors probably account for this: the higher incidence of NCIs in HS, which triggered earlier outcome-related censoring, and more frequent lapses in insurance coverage. Previous studies show that individuals with HS are disproportionately insured through Medicaid and are more likely to leave the workforce, leading to interruptions in commercial coverage.[27,28]

Strengths and Limitations

Strengths of our study include the utilization of a cohort that is representative of the US-insured population, thus enhancing the generalizability of our findings. The claims data offers reliable information on treatments and includes both outpatient and inpatient information across varied health care systems. Our study also has limitations. First, the potential dose-response relationship between adalimumab and infection risk was not accounted for, representing a limitation in our analysis that warrants further investigation. Second, the study did not adjust for steroid and chronic antibiotic use. Third, there is a lack of studies validating the algorithm used to identify patients with HS (1 *ICD-10* code associated with adalimumab prescription).

Conclusions

In summary, in this cohort study, patients with HS treated with adalimumab exhibited a higher risk of infection than patients with psoriasis. The nature of infections also varied, with patients with HS more frequently experiencing sepsis and genitourinary tract infections. Therefore, these findings under-

score the need for strategies to reduce the infection risk in this population. Future studies will be important to further understand the risk of infection in this population, focusing on the contribution of the disease severity and therapeutic regimens, as well as investigating prophylactic strategies to reduce infection burden in the HS population.

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Concept and design: Wafae, Charrow, Barbieri, Noe.
Acquisition, analysis, or interpretation of data: Wafae, Charrow, Stein.
Drafting of the manuscript: Wafae.
Critical review of the manuscript for important intellectual content: All authors.
Statistical analysis: Wafae, Stein.
Administrative, technical, or material support: Wafae.
Supervision: Charrow, Noe.

Conflict of Interest Disclosures: Dr Wafae reported serving as a trial investigator for AbbVie, Eli Lilly, Incyte, Moonlake, Avalo, Prometheus, Sanofi, Insmed, UCB, and Bristol Meyers Squibb outside the submitted work. Dr Charrow reported nonfinancial support from the Hidradenitis Suppurativa Foundation; personal fees from Incyte and UCB; is a trial investigator for Sonoma and Incyte; and grants from Dermatology Foundation and the Hidradenitis Suppurativa Foundation outside the submitted work. Dr Barbieri reported personal fees from Honeydew and Sanofi Pasteur outside the submitted work. Dr Noe reported personal fees from Boehringer Ingelheim, Argenx, and Takeda as well as grants from Boehringer Ingelheim and Bristol Myers Squibb outside the submitted work. No other disclosures were reported.

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