Real-World Healthcare Resource Utilization and Treatment Patterns Among Patients With Hidradenitis Suppurativa in Canada Using AI-Extracted Data

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Objective

To describe the healthcare resource utilization (HCRU), medication usage, and surgical procedures of patients with hidradenitis suppurativa (HS) in the Epidemiology and Treatment of Hidradenitis Suppurativa in Canada (ETHiC) study.

Background

- HS is a chronic, recurrent, progressive inflammatory skin disorder characterized by painful nodules and abscesses in intertriginous regions.
- HS imposes a substantial physical, psychological, and economic burden.[1–3] Despite increasing global research, health economic data on patients with HS in Canada remain limited.
- The ETHiC study is based on the largest longitudinal real-world dataset of patients with HS in Canadian community dermatology clinics.

Methods

- ETHiC is a retrospective, multi-centre, non-interventional cohort study using electronic health records (EHRs) from 11 Canadian community dermatology clinics representative of national dermatology care.
- Adults (≥18 years) with dermatologist-confirmed HS between January 1, 2016, and December 31, 2024, were included in the study.
- Clinical variables were abstracted using the validated artificial intelligence platform DARWEN™.
- Patient data were analyzed across cohorts:
  - Cross-sectional cohort: patients with HS with at least one visit at selected dermatology clinics between January 1, 2024, and December 31, 2024.
  - Incident biologic cohort: patients with HS, diagnosed prior to initiation of biologics, with their first biologic prescription at selected dermatology clinics between January 1, 2016, and June 30, 2024.
- The cohorts were not mutually exclusive, and patients could be included in both cohorts.
- HCRU outcomes were assessed between January and December 2024 among patients with ≥1 visit to the dermatologist in 2024 (cross-sectional cohort).

Results

- Between 2016 and 2024, HS accounted for 4.6% of all dermatological patients, rising from 4.1% in 2016 to 9.5% in 2024 (Figure 1).
- In 2024, the mean number of visits to the dermatologist per patient increased with HS severity (mild: 2.2; moderate: 2.7; severe: 3.5) (Figure 2).
- Similarly, deroofing procedures occurred more often among patients with severe disease (mild: 14.7%; moderate: 19.0%; severe: 21.3%), with the highest mean number of procedures per patient in severe disease (mild: 1.3; moderate: 1.3; severe: 1.5) (Table 1).
- Overall, 74.0% of patients received treatment for their HS; however, only 33.3% of patients with moderate disease and 57.4% of those with severe disease received biologics, most commonly adalimumab (Figure 3).
- Among patients treated with adalimumab in the incident biologic cohort who had intended maintenance dosing and frequency reported, 28.1% received 80 mg dosing, of whom 95.7% were treated weekly (Figure 4).

Summary & Conclusions

HS accounts for a growing share of dermatology caseloads in Canada

4.1% In 2016 → **9.5%** In 2024

ETHiC represents one of the largest real-world study cohorts of patients with HS

HS accounts for a growing share of dermatology caseloads, with severe disease associated with higher HCRU across dermatology visits, medication use, and surgical procedures.

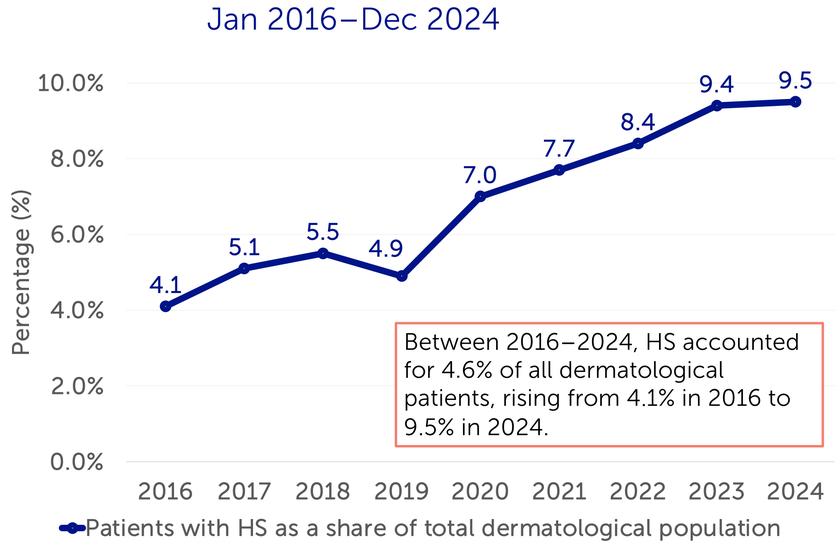
While biologic use was limited, weekly 80 mg adalimumab dosing may suggest inadequate disease control with standard dosing and highlights a gap in the disease management of severe HS.

Table 1 Surgical procedures among cross-sectional cohort by disease severity

	Total N=2,288	Disease severity: Mild N=197	Moderate N=384	Severe N=183
Number of incision and drainages performed	74	9	11	19
Total patients who underwent the procedure (n, %)	64 (2.8%)	8 (4.1%)	10 (2.6%)	13 (7.1%)
Mean (SD), per patient	1.16 (0.67)	1.12 (0.35)	1.10 (0.32)	1.46 (1.39)
Number of deroofing performed	541	37	95	58
Total patients who underwent the procedure (n, %)	373 (16.3%)	29 (14.7%)	73 (19.0%)	39 (21.3%)
Mean (SD), per patient	1.45 (0.90)	1.28 (0.59)	1.30 (0.64)	1.49 (0.94)
Number of wide local excision performed	41	≤5	8	6
Total patients who underwent the procedure (n, %)	39 (1.7%)	4 (2.0%)	8 (2.1%)	5 (2.7%)
Mean (SD), per patient	1.05 (0.22)	1.00 (0.00)	1.00 (0.00)	1.20 (0.45)
Number of laser hair removal performed	239	36	71	8
Total patients who underwent the procedure (n, %)	239 (10.4%)	36 (18.3%)	71 (18.5%)	8 (4.4%)
Mean (SD), per patient	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)

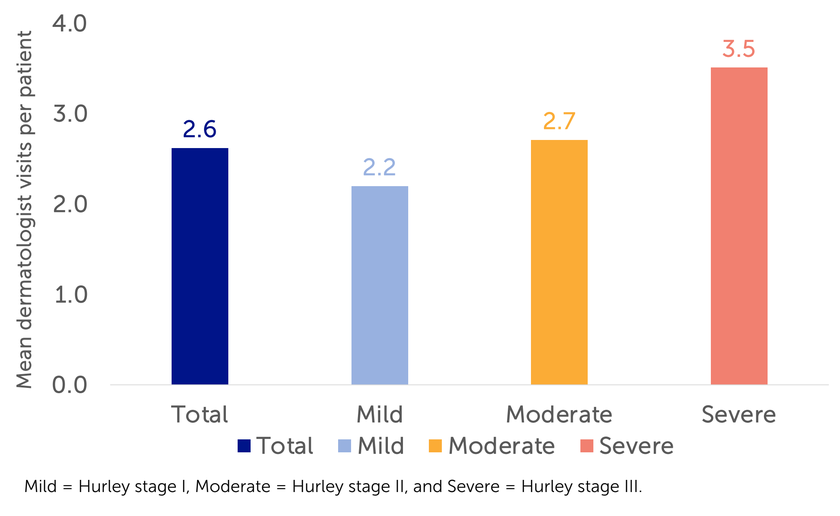
Please note that the sum of the Mild, Moderate, and Severe cohorts does not equal the Total cohort, as patients may be included in the Total cohort who did not have a reported disease severity. Mild = Hurley stage I, Moderate = Hurley stage II, and Severe = Hurley stage III. The number of patients who underwent cryoinsufflation and botulinum toxin injections was also examined, but due to small patient numbers, these data are omitted from Table 1.

Figure 1 Population size of HS seen by dermatologists in Canada as a share of total dermatological population between Jan 2016–Dec 2024



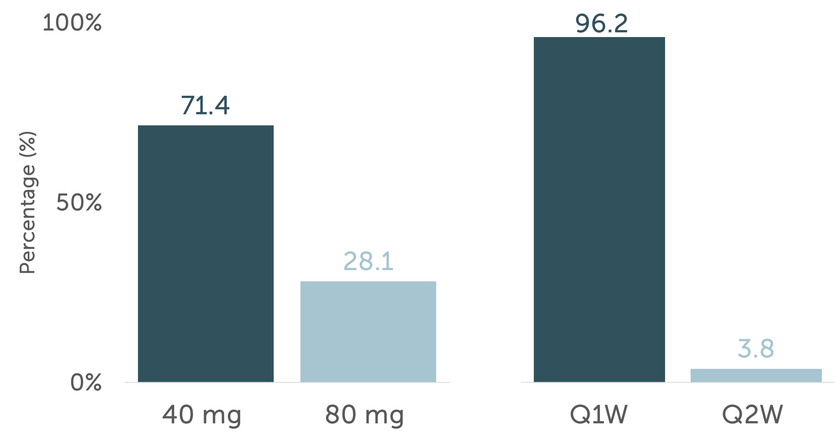
The dermatological population includes patients with a dermatological condition (including acne, actinic keratoses, xerosis, eczema, HS, hyperhidrosis, photoaging, psoriasis, rosacea, urticaria, and vitiligo) as diagnosed by a dermatologist according to the Canadian Dermatology Association (CDA).

Figure 2 Mean number of visits to the dermatologist in 2024 per patient by disease severity among cross-sectional cohort



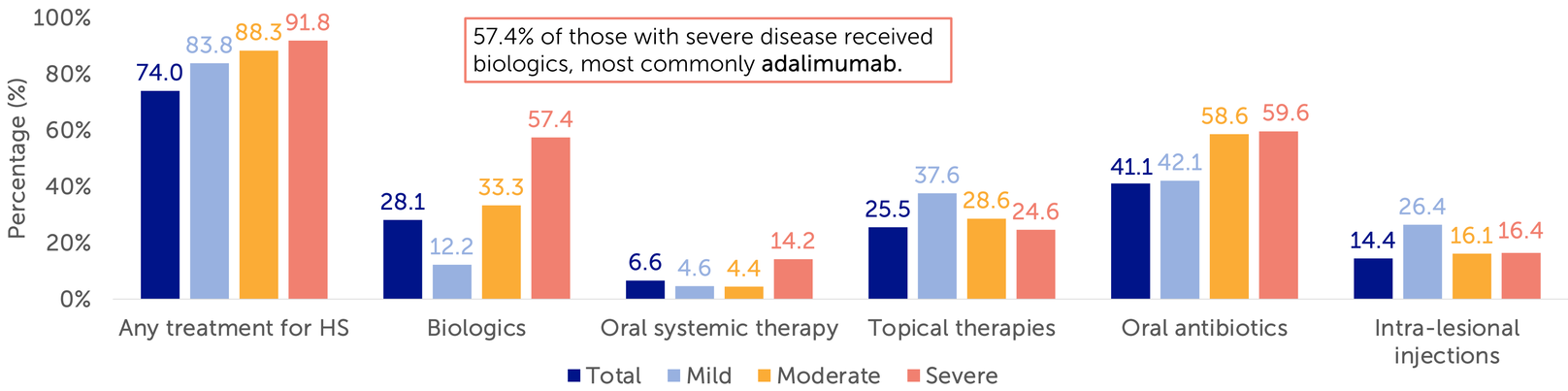
Mild = Hurley stage I, Moderate = Hurley stage II, and Severe = Hurley stage III.

Figure 4 Adalimumab treatment patterns among incident biologic cohort



216 is the number of patients receiving adalimumab with a reported maintenance dose, and 160 is the number of patients receiving adalimumab with a reported dosing frequency. Among patients with 80 mg intended maintenance dosing and administration frequency recorded, 95.7% were treated weekly.

Figure 3 Proportion of patients who received treatment for HS among cross-sectional cohort



Treatment numbers may not sum to 100% as patients may be on more than one treatment within each type of therapy. Mild = Hurley stage I, Moderate = Hurley stage II, and Severe = Hurley stage III.

Abbreviations: **EHRs:** electronic health records; **ETHiC:** Epidemiology and Treatment of Hidradenitis Suppurativa in Canada; **HCRU:** healthcare resource utilization; **HS:** hidradenitis suppurativa.

References: [1]Zouboulis CC et al. *Dermatology.* 2015;231:184–90. [2]Matusiak Ł. *Br J Dermatol.* 2020;183:e171–77. [3]Nguyen TV et al. *J Eur Acad Dermatol Venereol.* 2021;35:50–61.

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