Itch as a Marker of Psychiatric and Systemic Comorbidities in Pediatric Hidradenitis Suppurativa: A Propensity-Matched Cohort Study

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Background: Pruritus is increasingly recognized as a debilitating and underassessed symptom in pediatric hidradenitis suppurativa (HS), yet its clinical correlates remain poorly characterized in this population. Itch drives quality-of-life impairment, sleep disruption, and treatment-seeking, but no large-scale study has characterized the comorbidity profile associated with documented itch in pediatric HS, limiting clinicians' ability to identify patients who may warrant broader assessment.

Objective: To evaluate comorbidity burden associated with documented itch among pediatric patients with HS and to determine whether comorbidity associations reflect disease newly diagnosed after HS.

Methods: In this retrospective cohort study using TriNetX US Collaborative Network, patients aged 17 years or younger with HS, with and without a documented itch/pruritus diagnosis were identified by ICD-10 codes. Propensity-score matched for age, sex, and race in pairwise comparisons. Odds ratios (ORs) and 95% confidence intervals (CIs) are reported for pre-specified psychiatric, metabolic/endocrine, dermatologic, and pulmonary outcomes, including composite endpoints. A secondary analysis excluded patients with outcomes documented before HS diagnosis to isolate associations specific to the post-diagnosis period.

Results: The unmatched cohorts included 30,641 patients with HS and no documented itch/pruritus and 1,826 patients with HS and documents itch/pruritus. After propensity-score matching, 1,293 patients remained in each cohort. Documented itch was associated with markedly higher odds of composite psychiatric comorbidity (OR 1.90, 95% CI 1.62–2.24), including depression (OR 1.80, 1.47–2.19), anxiety (OR 1.85, 1.53–2.25), and sleep disorders (OR 1.77, 1.44–2.18). Composite dermatologic (OR 1.82, 1.55–2.13), metabolic/endocrine (OR 1.27, 1.08–1.49), and pulmonary (OR 1.63, 1.37–1.94) comorbidity were

each elevated. Atopic dermatitis demonstrated the strongest individual association (OR, 2.95; 95% CI, 2.22–3.92). After restricting to comorbidities newly diagnosed following HS onset, the psychiatric association persisted (composite OR 1.52, 1.20–1.92; depression, anxiety, and sleep disorders each remained significant), as did hypertension (OR 1.52, 1.08–2.13), obstructive sleep apnea (OR 1.67, 1.10–2.54), atopic dermatitis (OR 1.78, 1.18–2.68), and psoriasis (OR 1.81, 1.03–3.21). In contrast, dermatologic, metabolic, and pulmonary composites attenuated toward the null after excluding pre-existing diagnoses.

Conclusion: Documented itch identifies a pediatric HS subgroup with higher prevalence of psychiatric symptoms (depression, anxiety, and sleep disruption), atopic dermatitis, psoriasis, hypertension, and obstructive sleep apnea. These associations persisted when analyses were restricted to diagnoses emerging after HS onset, suggesting they were not solely attributable to pre-existing morbidity. Metabolic comorbidity, by contrast, appears attributable to disease predating HS onset rather than itch itself. Pending prospective validation, the findings suggest that itch may be a clinically meaningful marker for a more complex pediatric HS phenotype, underscoring the value of integrated psychiatric, sleep, and dermatologic assessment in this cohort.

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