DOES HYPERHIDROSIS INCREASE INFECTION-RELATED COMPLICATIONS FOLLOWING PRIMARY TOTAL HIP ARTHROPLASTY? A PROPENSITY-MATCHED ANALYSIS

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BACKGROUND

- Hyperhidrosis (HH) causes persistent cutaneous moisture, which may promote bacterial colonization, skin maceration, and impaired wound healing.
- Its relationship with infection-related complications after primary total hip arthroplasty (THA) remains unclear.
- This study evaluated whether HH is associated with infection-related and postoperative complications after primary THA.

METHODS

- Retrospective cohort study using the TriNetX U.S. Collaborative Network, comprising 67 healthcare organizations and >115 million patients at the time of analysis.
- Adults (≥18 years) undergoing primary total hip arthroplasty (CPT 27130) from January 2015 onward were identified. Patients with a diagnosis of focal or generalized hyperhidrosis (ICD-10 L74.5 or R61) before THA were compared with patients without hyperhidrosis.
- 1:1 propensity-score matching balanced demographic and clinical characteristics including age, sex, race, BMI, hypertension, anemia, diabetes, kidney disease, nicotine dependence, chronic steroid use, alcohol-related disorders, and rheumatoid arthritis.
- 90-day outcomes included emergency department visits, readmissions, sepsis, superficial soft-tissue infection, wound disruption, deep infection, revision, periprosthetic joint infection, hematoma/seroma, and cellulitis.
- 1- and 3-year outcomes included deep infection, revision, periprosthetic joint infection, explant/spacer/I&D procedures, dislocation, mechanical complications, and periprosthetic fracture.
- Outcomes were compared between matched cohorts using risk ratios, odds ratios, and risk differences with 95% confidence intervals.

RESULTS

- After propensity matching, 4,984 pairs were analyzed at 90 days and 4,801 pairs at 1 and 3 years.
- At 90 days, HH was associated with higher rates of cellulitis (1.2% vs 0.7%; RR 1.63; p=0.025), all-cause readmission (19.5% vs 16.0%; RR 1.22; p<0.001), and emergency department utilization (17.4% vs 13.2%; RR 1.32; p<0.001).
- PJI, deep infection, revision, and superficial SSI were numerically higher in the HH cohort, but these differences were not statistically significant.
- At 1 and 3 years, no significant differences were observed in PJI, deep infection, revision, or other major prosthesis-related complications.

Table 1. Outcomes following primary THA in propensity-matched HH and non-HH cohorts

Outcome	HH cohort events/N (%)	Non-HH cohort events/N (%)	Risk Ratio (95% CI)	p-value
90-day outcomes (4,984 matched pairs)				
Sepsis	42/4509 (0.93%)	48/4621 (1.04%)	0.90 (0.59–1.35)	0.604
Superficial soft-tissue infection	49/4903 (1.00%)	42/4941 (0.85%)	1.18 (0.78–1.77)	0.439
Wound disruption	53/4879 (1.09%)	54/4924 (1.10%)	0.99 (0.68–1.44)	0.961
Deep infection	74/4869 (1.52%)	66/4870 (1.36%)	1.12 (0.81–1.56)	0.495
Periprosthetic joint infection	69/4956 (1.39%)	58/4959 (1.17%)	1.19 (0.84–1.68)	0.324
Cellulitis	**52/4506 (1.15%)**	**33/4668 (0.71%)**	**1.63 (1.06–2.52)**	**0.025**
Postprocedural hematoma/seroma	41/4930 (0.83%)	47/4931 (0.95%)	0.87 (0.58–1.32)	0.521
Emergency department visit	**867/4984 (17.40%)**	**658/4984 (13.20%)**	**1.32 (1.20–1.45)**	**<0.001**
Revision	76/4944 (1.54%)	58/4955 (1.17%)	1.31 (0.94–1.84)	0.114
90-day readmission	**970/4984 (19.46%)**	**795/4984 (15.95%)**	**1.22 (1.12–1.33)**	**<0.001**
1-year outcomes (4,801 matched pairs)				
Deep infection	97/4689 (2.07%)	99/4704 (2.10%)	0.98 (0.75–1.30)	0.903
Periprosthetic joint infection	88/4771 (1.84%)	83/4774 (1.74%)	1.06 (0.79–1.43)	0.697
Revision	106/4760 (2.23%)	93/4769 (1.95%)	1.14 (0.87–1.50)	0.345
Explant / spacer / I&D	32/4775 (0.67%)	41/4779 (0.86%)	0.78 (0.49–1.24)	0.292
Dislocation	59/4781 (1.23%)	59/4785 (1.23%)	1.00 (0.70–1.43)	0.996
All mechanical complications	138/4735 (2.91%)	121/4739 (2.55%)	1.14 (0.90–1.45)	0.281
Periprosthetic fracture	63/4779 (1.32%)	43/4781 (0.90%)	1.47 (1.00–2.16)	0.051
Loosening	16/4785 (0.33%)	14/4785 (0.29%)	1.14 (0.56–2.34)	0.715
3-year outcomes (4,801 matched pairs)				
Deep infection	127/4689 (2.71%)	114/4697 (2.43%)	1.12 (0.87–1.43)	0.389
Periprosthetic joint infection	102/4771 (2.14%)	86/4773 (1.80%)	1.19 (0.89–1.58)	0.237
Revision	127/4760 (2.67%)	115/4760 (2.42%)	1.10 (0.86–1.42)	0.435
Explant / spacer / I&D	39/4775 (0.82%)	38/4771 (0.80%)	1.03 (0.66–1.60)	0.912
Dislocation	80/4781 (1.67%)	77/4788 (1.61%)	1.04 (0.76–1.42)	0.802
All mechanical complications	178/4735 (3.76%)	183/4739 (3.86%)	0.97 (0.80–1.19)	0.795
Periprosthetic fracture	76/4779 (1.59%)	81/4773 (1.70%)	0.94 (0.69–1.28)	0.682
Loosening	27/4785 (0.56%)	33/4786 (0.69%)	0.82 (0.49–1.36)	0.438

HH = hyperhidrosis; PJI = periprosthetic joint infection; SSI = surgical site infection; CI = confidence interval; I&D = irrigation and debridement. Bolded rows indicate statistically significant findings (p<0.05). Cohort N values vary slightly across outcomes because TriNetX excludes patients in whom the outcome occurred prior to the time window of interest.

CONCLUSION

- In this propensity-matched analysis, hyperhidrosis was associated with increased 90-day cellulitis, readmission, and emergency department utilization after primary THA.
- HH was not associated with a significant increase in PJI or deep infection at 90 days, 1 year, or 3 years.
- These findings suggest HH may be a marker of early postoperative morbidity rather than long-term prosthesis-related infection risk.