

BACKGROUND

- Hyperhidrosis (HH) causes persistent skin moisture, which may promote bacterial colonization and compromise surgical dressings.
- These concerns may be particularly relevant following TKA because of flexion-related shear across the incision and moisture accumulation around the knee.
- However, the association between HH and postoperative infectious and implant-related outcomes after TKA remains poorly defined.

METHODS

- A retrospective cohort study was performed using the TriNetX U.S. Collaborative Network, which included approximately 115 million patients from 67 healthcare organizations at the time of analysis.
- Adults ≥ 18 years undergoing primary TKA (CPT 27447) on or after January 1, 2015 were identified.
- The HH cohort included patients with a preoperative diagnosis of focal hyperhidrosis (ICD-10 L74.5) or generalized hyperhidrosis (R61); patients without either diagnosis comprised the control cohort.
- 1:1 propensity-score matching was performed to balance baseline demographics, BMI categories, and major medical comorbidities between HH and non-HH cohorts.
- Outcomes were assessed across three postoperative intervals: 90 days, 1 year, and 3 years. The matched populations included 7,146 pairs at 90 days, 7,090 pairs at 1 year, and 7,029 pairs at 3 years.
- 90-day outcomes included sepsis, superficial soft-tissue infection, wound disruption, deep infection, PJI, cellulitis, hematoma/seroma, revision, emergency department utilization, and all-cause readmission.
- 1- and 3-year implant-related outcomes included PJI, revision, explant/spacer procedures, instability, mechanical complications, and periprosthetic fracture.

RESULTS

- At 90 days, patients with HH demonstrated significantly greater emergency department utilization (18.74% vs 13.99%; RR 1.34, 95% CI 1.24–1.44; $p < 0.001$) and all-cause readmission (16.79% vs 14.74%; RR 1.14, 95% CI 1.06–1.23; $p < 0.001$).
- Superficial soft-tissue infection (0.78% vs 0.54%; RR 1.45; $p = 0.074$) and cellulitis (1.58% vs 1.21%; RR 1.31; $p = 0.070$) were numerically higher with HH but did not reach statistical significance.
- No significant 90-day differences were observed in PJI, deep infection, wound disruption, sepsis, hematoma/seroma, or revision.
- At 1 and 3 years, no significant differences were identified in PJI, revision, explant/spacer procedures, instability, or mechanical complications.

Table 1. Outcomes following primary TKA 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 (7,146 matched pairs)				
Sepsis	53/6603 (0.80%)	56/6677 (0.84%)	0.96 (0.66–1.39)	0.818
Superficial soft-tissue infection	55/7049 (0.78%)	38/7079 (0.54%)	1.45 (0.96–2.19)	0.074
Wound disruption	76/6997 (1.09%)	74/7002 (1.06%)	1.03 (0.75–1.41)	0.866
Deep infection	71/7096 (1.00%)	60/7061 (0.85%)	1.18 (0.84–1.66)	0.349
Periprosthetic joint infection	69/7109 (0.97%)	59/7078 (0.83%)	1.16 (0.82–1.65)	0.388
Cellulitis	102/6451 (1.58%)	80/6612 (1.21%)	1.31 (0.98–1.75)	0.070
Postprocedural hematoma/seroma	26/7056 (0.37%)	29/7086 (0.41%)	0.90 (0.53–1.53)	0.697
Emergency department visit	1339/7146 (18.74%)	1000/7146 (13.99%)	1.34 (1.24–1.44)	<0.001
Revision	50/7021 (0.71%)	49/6984 (0.70%)	1.02 (0.69–1.50)	0.941
90-day readmission	1200/7146 (16.79%)	1053/7146 (14.74%)	1.14 (1.06–1.23)	<0.001
1-year outcomes (7,090 matched pairs)				
Periprosthetic joint infection	104/7053 (1.47%)	93/7011 (1.33%)	1.11 (0.84–1.47)	0.455
Revision	84/7019 (1.20%)	91/7010 (1.30%)	0.92 (0.69–1.24)	0.588
Explant / spacer	33/7050 (0.47%)	39/7021 (0.56%)	0.84 (0.53–1.34)	0.468
Instability	23/7073 (0.33%)	13/7068 (0.18%)	1.77 (0.90–3.49)	0.096
Mechanical complications	78/7005 (1.11%)	57/7002 (0.81%)	1.37 (0.97–1.92)	0.070
Periprosthetic fracture †	—	—	—	—
3-year outcomes (7,029 matched pairs)				
Periprosthetic joint infection	136/6993 (1.94%)	136/6961 (1.95%)	1.00 (0.79–1.26)	0.970
Revision	145/6958 (2.08%)	142/6961 (2.04%)	1.02 (0.81–1.28)	0.855
Explant / spacer	42/6988 (0.60%)	56/6961 (0.80%)	0.75 (0.50–1.11)	0.150
Instability	59/7013 (0.84%)	43/7008 (0.61%)	1.37 (0.93–2.03)	0.113
Mechanical complications	139/6945 (2.00%)	119/6949 (1.71%)	1.17 (0.92–1.49)	0.207
Periprosthetic fracture	29/7021 (0.41%)	20/7019 (0.28%)	1.45 (0.82–2.56)	0.198

CONCLUSION

- HH was associated with increased early healthcare utilization after primary TKA, including higher 90-day ED visits and readmissions.
- Although superficial SSI and cellulitis were numerically more frequent among patients with HH, no infection-related outcome reached statistical significance, including PJI or deep infection.
- Because EMR-based data cannot characterize HH severity, distribution, treatment status, or diagnostic granularity, prospective studies with detailed HH phenotyping are needed to clarify whether specific subgroups are at increased postoperative risk.