Insulin Dependence Does Not Influence Short-Term Complications Following Total Shoulder Arthroplasty in Patients with Diabetes Mellitus

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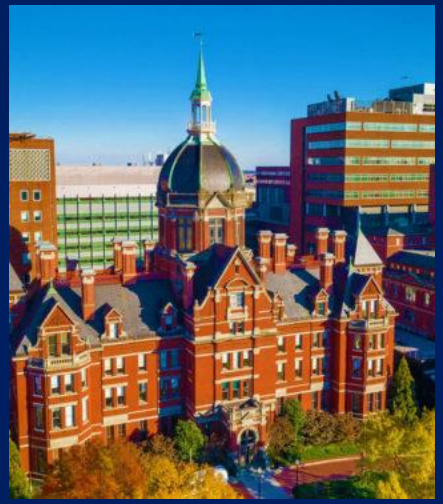

Disclosures

- Dr. Weber:
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Introduction

- Diabetes mellitus (DM) affects 463 million adults worldwide, with two subtypes: insulin-dependent (IDDM) and non-insulin-dependent (NIDDM).[1]

Introduction

- DM is strongly associated with osteoarthritis (OA), a leading indication for total shoulder arthroplasty (TSA), which includes reverse and anatomic TSA.[2,3]

- DM has been linked to poorer outcomes in TSA, including higher infection rates, longer hospital stays, and increased readmissions.[4,5,6]

Objectives

- Compare 30-day perioperative complications in TSA patients with IDDM and NIDDM.
- Assess differences in demographic and clinical characteristics between the two groups.
- Analyze the influence of DM subtype on short-term outcomes in TSA, particularly in patients with OA.

Materials and Methods

- **Study Design:** Retrospective analysis of National Surgical Quality Improvement Program (NSQIP) data from 2006 to 2022.

- **Cohort Selection:** Adult patients (≥18 years) who underwent primary TSA, excluding those without documented DM. Patients were stratified by insulin dependence (IDDM vs. NIDDM).

Materials and Methods

- **Demographic and Baseline Data:** Age, sex, race, BMI, HbA1c, comorbidities, and functional status.

- **Outcomes Measured:** Discharge timing, postoperative complications (e.g., infection, myocardial infarction, sepsis), and mortality within 30 days.

- **Statistical Analysis:** Univariate and multivariate analyses to compare outcomes between IDDM and NIDDM groups.

Table 1: NIDDM and IDDM TSA patients differ in demographics and comorbidities, but not in postoperative complications after matching

Variable	Odds Ratio	95% CI	P Value
Race/ethnicity			
Non-Hispanic White	1.88	1.05–3.36	**0.03**
Non-Hispanic Black	0.99	0.64–1.53	0.97
Hispanic	4	1.18–13.61	**0.03**
Non-Hispanic Asian	5.9	1.12–30.97	**0.04**
Non-Hispanic other	0.99	0.66–1.50	0.98
BMI	0.96	0.94–0.99	**0.01**
HbA1c level	0.46	0.40–0.53	**<0.001**
CHF	0.53	0.32–0.86	**0.01**
Immunosuppressive therapy	0.41	0.25–0.68	**<0.01**

Table 2: NIDDM and IDDM OA-TSA patients differ in comorbidities, but not in postoperative complications after matching

Variable	Odds Ratio	95% CI	P Value
HbA1c level	0.46	0.38–0.56	**<0.001**
CHF	0.48	0.26–0.88	**0.020**
Immunosuppressive therapy	0.4	0.21–0.77	**0.006**
Functional status			
Partially dependent	0.35	0.13–0.94	**0.040**
Totally dependent	1		

Discussion/Conclusion

- The study contradicts prior research suggesting worse outcomes in IDDM patients.
- Our results highlight the need for further investigation into longer-term outcomes and other influencing factors such as glucose variability and comorbidity management.
- Insulin dependence alone may not be a sufficient predictor of short-term postoperative outcomes following TSA.

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