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ORIGINAL RESEARCH

10. Association Between Diabetes Mellitus and Intraoperative Awareness During General Anesthesia: A Retrospective Cohort Study

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https://www.youtube.com/watch?v=4rJ3DHWeKRs&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=2047s

Background: Despite advancements in anesthetic techniques, specific patient populations remain vulnerable to intraoperative awareness. Diabetes mellitus (DM), increasingly prevalent and often accompanied by significant comorbidities, may complicate anesthetic management and mask signs of inadequate anesthetic depth. This study investigates whether DM is independently associated with an increased risk of unintended intraoperative awareness.

Methods: A retrospective cohort analysis was conducted using the TriNetX research platform, a federated health database. Two cohorts were identified: patients with DM and a control group without DM undergoing surgery under general anesthesia. Propensity-score matching (1:1) was used to control for confounders, including cognitive impairment, chronic obstructive pulmonary disease, substance use, cardiovascular disease, and anesthesia type. The incidence of intraoperative awareness was compared between groups.

Results: After matching, 193,868 patients were included in each cohort (total n=387,736). The incidence of intraoperative awareness was significantly higher in the DM group (0.027%, n=52) compared to the non-DM group (0.015%, n=29). DM was associated with a statistically significant increased risk (absolute risk difference: 0.012%, 95% CI: 0.003–0.021%, p=0.0106). Diabetic patients had nearly twice the risk of intraoperative awareness (RR=1.793, 95% CI: 1.139–2.824; OR=1.793, 95% CI: 1.139–2.825).

Conclusion: DM significantly increases the risk of intraoperative awareness during general anesthesia. These findings underscore the importance of heightened anesthetic vigilance and personalized monitoring strategies in diabetic patients to mitigate this risk.

Table 1. Comparison of Intraoperative Awareness Incidence Between Diabetic and non-Diabetic Cohorts.

Cohort	Patients in Cohort	Patients with Outcome	Risk
Diabetes Cohort	193,868	52	0.027%
Non-Diabetic Control Cohort	193,868	29	0.015%

Risk Difference	95% CI (Risk Diff)	z	p	Risk Ratio	95% CI (Risk Ratio)	Odds Ratio	95% CI (Odds Ratio)
0.012%	(0.003%, 0.021%)	2.556	0.0106	1.793	(1.139, 2.824)	1.793	(1.139, 2.825)

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