



## Anaesthesia Has Major Impact on CABG Surgery Risks



For patients undergoing coronary artery bypass graft (CABG) surgery, according to researchers, the anaesthesiologist managing the procedure can have a major impact on the risk of adverse outcomes. The study found "substantial variability" in death or major complications across anaesthesiologists, with close to a twofold difference in risk for CABG patients cared for by low- versus high-performing anaesthesiologists.

"These findings suggest that there may be opportunities to improve perioperative management to improve outcomes among high-risk surgical patients," say by Dr. Laurent G. Glance of University of Rochester (N.Y.) Medical Center and colleagues. The findings are reported in the journal *Anesthesia & Analgesia*.

The research team used a New York State heart surgery database to study the impact of anaesthesiologists on the outcomes of CABG surgery. The analysis included 7,920 patients undergoing isolated CABG (no other procedures performed at the same time) at 23 hospitals in 2009-2010. The cases were managed by 91 different anaesthesiologists and 97 surgeons. The study's key findings include:

- "Low-performing" anaesthesiologists (in the bottom one-fourth of performance): the adjusted rate of death or major complications was 3.33 percent.
- "High-performing" anaesthesiologists (in the top one-fourth): the risk of serious adverse outcomes was 1.82 percent.
- For patients managed by low-performing anaesthesiologists, the adjusted rate of adverse outcomes was about 82 percent higher, compared to those managed by high-performing anaesthesiologists.
- The absolute difference in risk between groups was about 1.5 percentage points.

"The variability across anaesthesiologists was highly significant," Dr. Glance and co-authors point out. "The performance gap was observed across multiple hospitals and all patient risk groups."

Notably, the absolute difference in mortality risk is similar to that reported for high- and low-volume surgeons performing CABG procedures. "This observation should encourage anaesthesiologists and surgeons to increase their efforts to develop evidence-based strategies for improving perioperative care," according to Dr. Glance et al. Especially in the era of "Big Data" created by the use of intraoperative electronic medical records, they add, "[I]t should be feasible to create and analyse vast digital libraries of clinical information and use these data to identify best practices in perioperative medicine."

While anaesthesia for surgery is generally safe, there is ongoing debate over the true risk of death and serious

complications. Counting only very rare complications may create the impression that anaesthesia is "safer than it actually is." The research team says, "However, if more common but still major complications...are caused as much by anaesthesia as by surgical management, then surgery can be made safer by further improving anaesthesia care."

In a related commentary, Dr. Steven Shafer, Editor-in-Chief of *Anesthesia & Analgesia* and Professor of Anaesthesiology, Perioperative and Pain Medicine at Stanford University writes: "These are very important findings, but they must be considered preliminary until further research helps us understand why performance varies among anaesthesiologists. The answer is likely more complex than just differences in clinical skill."

Source: [International Anesthesia Research Society \(IARS\)](#)

Image Credit: St. Michael's Hospital (Ontario, Canada)

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