

## **Study Examines Effect Of Sleep Deficiency And Possible Surgical Complications**

Surgeons who had operated the night before an elective daytime gallbladder surgery did not have a higher rate of complications, according to a study in the November 6 issue of *JAMA*.

"Lack of sleep is associated with impaired performance in many situations. To theoretically prevent medical errors, work-hour restrictions on surgeons in training were imposed. There are now proposals for similar work-hour restrictions on practicing surgeons. Several studies found no association between surgeon sleep deprivation as assessed by operating the night prior to an operation or when surgeons report few hours of sleep and patient outcomes. Prior studies were limited because of small sample sizes and being from single academic institutions. Consequently, there is insufficient evidence to conclude that surgeon performance is compromised by insufficient sleep the night prior to performing surgery," according to background information in the article.

Christopher Vinden, M.D., of Western University, London, Ontario, Canada, and colleagues examined if there was any association between operating the night before performing an elective cholecystectomy (gallbladder removal) and complications. The analysis was conducted using administrative health care databases in Ontario. Participants were 2,078 patients (across 102 community hospitals) who underwent elective laparoscopic cholecystectomies performed by surgeons (n = 331) who operated the overnight before (between midnight and 7 a.m.). Each of these patients was matched with 4 other elective laparoscopic cholecystectomy recipients (n = 8,312), performed by the same surgeon when there was no evidence that surgeon having operated the overnight before.

The primary outcome was conversion of a planned laparoscopic cholecystectomy (removing the gallbladder using a camera and tiny incisions) to an open cholecystectomy (large incision of the abdomen to remove the gallbladder) during the procedure. Although not always considered a complication, conversion to open cholecystectomy may serve as an aggregate end point for many complications, and patients view conversion as an unwanted outcome. Secondary outcomes included evidence of iatrogenic injuries (injuries caused by the surgery) or death.

The researchers found no association between conversion rates to open operations and whether or not surgeons operated the night before (2.2 percent with vs. 1.9 percent without overnight operation); or to the risk of iatrogenic injuries (0.7 percent vs. 0.9 percent); or death ( $\leq$  0.2 percent vs. 0.1 percent). These proportions were not statistically different.

The authors write that policies limiting attending surgeon work hours are controversial. "Critics suggest such policies reduce continuity in care, increase

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communication errors, and introduce the potential for a bystander effect (in which one surgeon may expect another to bear the burden for authority and responsibility). Restructuring health care delivery to prevent surgeons operating during the day after they operated the previous night would have important cost, staffing, and resource implications."

"These findings do not support safety concerns related to surgeons operating the night before performing elective surgery."

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