

Routine Preoperative Laboratory Testing for Patients Scheduled for Cataract Surgery

Introduction

Cataract surgery is the most common operation performed in the Medicare population. It is a proven highly effective and safe procedure, offering notable improvements in visual function and quality of life. In the past, the traditional approach for patients scheduled for cataract surgery included a comprehensive medical evaluation with laboratory testing, based on guidelines published by the Agency for Health Care Policy and Research in 1993.¹ However, there has been uncertainty over the effectiveness and variation of preoperative medical testing performed across the country (i.e., complete blood counts (CBC), serum electrolytes, and electrocardiograms (EKG)).

A survey reported that a significant proportion of physicians did not believe that preoperative tests were clinically necessary, but ordered them anyway due to institutional requirements, medicolegal concerns, or because they believed that another specialist wanted them performed.² The direct cost to Medicare for routine medical testing prior to cataract surgery is estimated at \$150 million each year.³

Background

In 1994, the Agency for Health Policy and Research initiated the Study of Medical Testing for Cataract Surgery⁴ to assess whether routine medical testing prior to cataract surgery reduces the rate of complications in the perioperative interval.

There is evidence from at least three randomized clinical trials that suggests preoperative medical testing for cataract surgery does not protect against medical adverse events.^{4,5,6} These studies were the focus of a Cochrane review in 2009, which was updated in 2012.^{7,8}

The largest study was a randomized controlled trial that involved nine clinical centers in the United States and Canada; including private practices utilizing free-standing ambulatory surgery centers, community hospitals, and academic medical centers.⁴ The study enrolled 18,189 patients scheduled for 19,557 cataract surgeries, where 9,411 patients underwent routine medical testing and 9,408 patients did not undergo testing. Follow-up data were 100% complete on the day of surgery and 99.8% complete one week after surgery. The two groups of patients studied were comparable in age, sex, race, coexisting illnesses, American Society of Anesthesiology (ASA) risk class, and self-reported health status. The study excluded patients who were to receive general anesthesia, had a myocardial infarction within the preceding three months, and could not speak English or Spanish.

A preoperative history and physical examination was performed, and patients were randomized to routine testing (CBC, EKG, electrolytes, blood urea nitrogen, creatinine, and glucose) versus testing only when a finding on the history or physical would have led to a lab test even without planned cataract surgery. Specific tests were conducted in the "control" group as per the direction of the attending physician. Patients in both groups had a finger-stick blood sugar test if they were diabetic.

The study demonstrates that routine preoperative laboratory testing in patients scheduled to undergo cataract surgery is not necessary. The overall rate of medical complications following cataract surgery was low, and generally not serious or life-threatening. Adverse events developed at the time of surgery or within seven days of surgery in ~3% of cases in each group. Patients who had undergone

routine medical testing did not have fewer adverse events, even when stratifying patients by age, sex, race, physical status, and medical history. No differences in the cancellation of surgery between those with routine preoperative medical testing and those with no or limited testing was found.

The two smaller studies included in the Cochrane review reached similar conclusions.^{5,6} All three studies strongly support that preoperative medical testing prior to cataract surgery is not necessary or protective against medical adverse events.^{7,8} One study estimated the cost to be 2.55 times higher in those who had routine preoperative medical testing compared to those with selective preoperative medical testing.⁵ Although the number of studies is limited, the three studies were in agreement and supported by a subsequent report from Canada on cost-saving experiences regarding a policy change to stop routine preoperative testing before ambulatory cataract surgery.⁹

Conclusion

Routine medical tests performed on patients before cataract surgery are unnecessary because they do not increase the safety of the procedure. While medical adverse events are higher in patients with medical comorbidities, there is no benefit in providing routine testing to groups of patients with co-existing illnesses.⁴ Preoperative medical tests can be ordered when a finding on a history or physical examination indicates a need, even if surgery is not scheduled.

Preoperative medical testing for all types of surgery accounts for roughly \$30 billion in health care costs annually.¹⁰ Financial resources saved by the elimination of unnecessary routine tests could be better directed toward other patient care requirements.

References

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Approvals

Approved by the Quality of Care Secretariat, January 2000

Updated and approved by the Quality of Care Secretariat, January 2014