CT image screening inherently involves a complex interplay of many factors: risk of developing lung cancer, quality of screening, judicial judgment in evaluation and management of screening findings, competing risks and compliance. Accounting for this complexity is particularly important in evaluating the effect of screening as we try to define how it will work outside the context of a controlled study. As the risk of lung cancer increases, so do the risks of competing causes of death and potential complication of screening and treatment. The elevation in risk associated with the presence of COPD is an intriguing example. Although COPD increases the risk of lung cancer, it also hinders the interpretation of CT scans, increases the risks associated with surgical treatment, and overall shortens life expectancy—all features that detract from the benefits of CT image screening. We look forward to carefully constructed modeling studies that help shed light on these matters.

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REFERENCES

Sleep-Disordered Breathing and Postoperative Outcomes

Patient Safety First!

To the Editor:

We read with interest the article by Mokhlesi et al1 in CHEST (September 2013) on the analysis of sleep-disordered breathing (SDB) and postoperative outcomes after elective surgery. They found that despite the increased independent association of SDB with postoperative cardiopulmonary complications, the diagnosis of SDB was not independently associated with increased in-hospital death. Nevertheless, we raise some concerns about the final message given to the readers of this manuscript that should be discussed.

1. The group of patients investigated in this study was not homogeneous, since the term SDB includes different sleep disorders, like central sleep apnea and obesity hypoventilation syndrome, that might differently affect postoperative cardiopulmonary complications and in-hospital mortality. Although central sleep apnea prevalence in a surgical population is still unknown, its association with heart and chronic renal failure is not negligible, possibly leading to a different risk for cardiopulmonary complications than OSA alone. However, most of the published studies and recommendations are focused on OSA only.
2. Reported data values on in-hospital mortality by Mokhlesi et al1 are lower than those found in literature. A recent 7-day cohort study reported a 4% inhospital mortality rate after noncardiac surgery. Similarly, Finks et al.2 for patients undergoing pancreatectomy, reported in the same period a range of mortality from 6.5% to 5.9% as compared with 0.5% found by Mokhlesi et al1 in the group of patients undergoing abdominal surgery. It can be hypothesized that the cohort of patients included in the Mokhlesi et al1 study, although very extensive, might not be representative of the overall surgical population, leading to a systematic undervaluation of inhospital mortality.
3. The authors state that SDB disorders were not associated with increased in-hospital mortality but with a higher risk of postoperative cardiopulmonary complications,1 likely due to upper airway dysfunction. According to the Helsinki Declaration on Patient Safety in Anaesthesiology,3 any effort should be focused not only on reducing perioperative in-hospital mortality but also on improving long-term outcome and quality of life, as well as ensuring that the patients do not experience adverse events, such as those reported associated with SDB.

We hope that these observations further support the authors’ proposal for a large, prospective, multicenter study aimed at assessing the impact of early diagnosis and treatment of SDB on patients’ outcomes in the postoperative period. In the meantime, let’s not forget that patients’ safety comes first!

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States reported a 30-day mortality of 0.64%. These investigators analyzed 14,962 patients undergoing various types of surgery over a 4-year period and found no independent association between obstructive sleep apnea and postoperative mortality. However, they noted that many practices that make "clinical sense" result in no clinical benefit or actually increase morbidity and mortality in large surgical volumes in most advanced countries. Therefore, we cannot simply assume that perioperative CPAP therapy should be universally beneficial or that all patients will be able to adhere to it. Although I personally believe that perioperative CPAP therapy is beneficial, we may have to rely on unique approaches to clinical research to provide clarity to the field.

Response

To the Editor:

I thank Dr Corso and colleagues for their thoughtful comments and careful review of our recent study in CHEST (September 2013). I agree with their comment that the term sleep-disordered breathing (SDB) encompasses central sleep apnea as well as sleep hypventilation syndromes. However, we excluded patients with International Classification of Diseases, Ninth Revision, Clinical Modification codes for central sleep apnea and obesity hypventilation syndrome from our cohort.

The low in-hospital mortality in our cohort of abdominal surgery is most likely related to the fact that the vast majority of surgeries were elective hemicolecotomies and cholecystectomies. The higher in-hospital mortality reported by the European Surgical Outcomes Study was in part because of inclusion of patients undergoing nonelective surgeries (25% of cases) and significant differences in mortality across various European nations. A recent report of 14,962 patients undergoing various types of surgery over a 4-year period at a tertiary care academic medical center in the United States reported a 30-day mortality of 0.64%. These investigators also did not find an independent association between high risk for OSA and postoperative mortality.

Caution is necessary when drawing inferences from our data. Although we found important associations between OSA and adverse postoperative outcomes, the cross-sectional nature of our study does not establish the direction of causality. Only well-designed prospective studies will provide insights as to whether OSA increases perioperative morbidity and mortality. We wholeheartedly agree with Dr Corso and colleagues that patient safety should be our primary goal. Although it makes intuitive sense that screening, diagnosing, and treating OSA in the perioperative period is "good medicine," we have seen time and again that many practices that make "clinical sense" result in no clinical benefit or actually increase morbidity and mortality in large clinical trials. The cost and burden associated with screening and treating all adult patients for OSA prior to surgery could be overwhelming to any medical system, particularly with the large surgical volumes in most advanced countries. Therefore, empirical evidence is urgently needed to establish whether this strategy does indeed improve perioperative outcomes. As we design clinical studies, we cannot simply assume that perioperative CPAP is universally beneficial or that all patients will be able to adhere to it.

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