Drawing policy conclusions from uncontrolled studies

Studying a population of adults seen in clinic for biliary colic, Boris Sobolev and associates[1] documented an association between longer waiting times and admissions for emergency cholecystectomy.

However, because the patients were not randomly assigned to the waiting list, readers should entertain the possibility that the findings were driven by an association with a so-called "third variable." For example, the patients who ended up on the waiting list might have been sicker. If so, the observed association between waiting times and emergency admissions was actually driven by an unobserved association between health status and emergency admissions. Sobolev and associates[1] acknowledge the possibility of confounding by patient morbidity, and they do attempt rudimentary adjustment for other potential confounding variables. However, even if they had had access to better data on patients' health status, the criticism of potential confounding would remain.

Prior studies, none of which were cited by Sobolev and associates,[1] have addressed this problem by means of econometric methodology.[2-4] Hamilton and colleagues[2] used an estimation strategy that accounted for unmeasured health differences and found no effect of waiting times on death rates for patients waiting for hip fracture surgery. Subsequent comparisons of patients with hip fracture in the United States and Canada[3,4] arrived at a similar conclusion.

Policy-makers seeking to draw conclusions from the findings of Sobolev and associates[1] would be well advised to consider these more sophisticated econometric analyses in their deliberations.

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References

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[Three of the authors respond:]

Appropriate access time for surgery is often determined on the basis of expert opinion. However, in our study,[1] we used surgery records to assess the risk of undergoing emergency surgery in relation to the duration of the wait for elective cholecystectomy. Given the magnitude of the effect that we observed,[1] we assumed that there might be policy implications.

Alexander Tsai brings attention to articles that might be relevant in other circumstances, but for the purposes of our research,[1] it is difficult to see how results concerning length of stay and death after hip fracture surgery could help the reader to better interpret our findings on the risk of emergency admission while awaiting elective cholecystectomy.

Tsai suggests that "the patients who ended up on the waiting list might have been sicker." In our study[1] we assessed the frequency of emergency surgery after registration on the waiting list. Patients who underwent emergency surgery without placement on the list might have been less or more sick, but they were not included in the study. For patients on the list, coexisting illnesses might indeed have caused addi-