In a study of concordance between the clinical diagnosis and autopsy diagnosis, Dr. Tai and his colleagues\(^1\) concluded that knowledge of the correct (clinical) diagnosis would have altered therapy in 44% of the discordant cases and perhaps would have prevented the deaths of the patients.

In this study of patients admitted to a medical intensive care unit (MICU), autopsies were performed on only 91 of the 401 patients (22.3%) who had died in the MICU. Consequently, the clinical diagnoses could be compared with the autopsy diagnoses in this selected subsection of the fatalities. The authors compared the deceased patients who were subjected to autopsy with those who were not with respect to their age, sex, race, APACHE (acute physiology and chronic health evaluation) III score, and the length of stay in MICU. The two groups were similar except for age—the autopsy group was significantly younger. However, none of these factors were determined to predict a correct diagnosis, and the factors that were associated with a correct diagnosis were not known to the authors or they were not included in the analysis. Consequently, the authors could not investigate possible selection bias. The selection bias\(^2\) affects the results of a study in the same way as the nonresponse bias does in a survey or in a follow-up observational study, where information on the outcome among the nonrespondents is not known. Bias is strongly suspected if the respondents are not representative of the study population. In other words, if nonrespondents differ from the respondents with respect to the risk factors for the study outcome, the results based on only the respondents would most probably be biased, particularly when the response rate is very low.\(^3\)\(^,\)\(^4\)

In the discussion of Tai et al.\(^1\) the authors compared the level of discordance (19.8%) in their study (with autopsy diagnosis for 22.3% of 401 patients) to the level of discordance (30%) in a similar, larger study\(^5\) (with autopsy diagnosis for 96% of 400 patients). But, they failed to declare that the difference in the levels of discordance in the two studies was statistically insignificant ($p = 0.135$), most probably due to the small numbers in the former study. If the autopsy rate in their study had also been 96%, the authors might also have found greater discordance.

The authors considered an association between the discordance in diagnosis and the conditions and procedures that lead to admission into the MICU, but the numbers were too small for any meaningful results. This study should be regarded as inconclusive because of a probable selection bias that could not be investigated and because of the small number of autopsy diagnoses.

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Disclaimer: The views expressed in this letter do not represent the views and policies of the Centers for Medicare & Medicaid Services or the United States.

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To the Editor:

We thank Dr. Wecht for the positive comments about our report.\(^1\) We agree that postmortem examination has unique value for the teaching of young and even experienced physicians.

Dr. Sheikh, in his letter, makes several important comments. Since publication of our study, other authors have addressed, in retrospective and prospective studies, the utility of autopsies in patients who died in the ICU. All of these studies\(^2\)–\(^4\) report that, for a significant percentage of patients, a new diagnosis is made during the autopsy. Roosen et al\(^2\) reported a retrospective study of patients who had died in 1996 in their medical ICU. Their rate of autopsy was very high (93%), and in 19% of their 100 patients studied, the autopsies revealed major diagnoses that were not suspected prior to death. Twigg et al\(^3\) recently reported a study of 97 patients in the medical surgical ICU who had postmortem studies. The rate of autopsy was 40%, and the rate of discrepancies was 23%. Finally, Mokhtari et al\(^4\) in a recent prospective study reported in abstract form, found that postmortem studies revealed major diagnostic discrepancies in up to 27% of their patients. This latest report was conducted over 3 years; the autopsy rate was 53%, and at the time of death of the patients, the physicians taking care of the patient had listed the major premortem diagnoses. During the postmortem studies, a senior physician had been present, and in later academic sessions, the cases were discussed and the discrepancies were analyzed.

We think that these three recent studies, together with our report and the articles referenced in our article,\(^1\) consistently showed that, in spite of significant improvements in diagnostic modalities, postmortem studies performed on patients who have died in the ICU show 19% to 30% discordance between premortem and postmortem diagnosis. Furthermore, there is an extensive body of literature in the previous decades that suggest very strongly that postmortem studies are useful and effective tools for discovering clinicopathologic correlations and for returning the lessons learned to the bedside.\(^3\) Ignoring these lessons may have a negative impact for new generations of physicians.

Inoue et al\(^6\) in their letter, make valid points, but the objective of our report was to review the role of the autopsy in patients who died in the ICU. The focus of our report was not undiagnosed malignancies—we think that Inoue et al\(^6\) and others have already explored that area extensively.

Our goal was to emphasize the usefulness of autopsy in patients who had been critically ill before death. We believe that the autopsy study is still very useful for uncovering discrepancies in diagnoses. That does not mean that knowledge of these diagnoses will change the prognosis or even decrease the mortality of the patient. However, postmortem studies still have an educational role, and they probably have a role in assessing the quality of service that these critically ill patients received.

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