

## CORRESPONDENCE

result in large differences in positive predictive values. More data are required, preferably from large samples of women, before we can judge the clinical usefulness of preoperative pregnancy testing.

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## Preoperative Pregnancy Testing in Ambulatory Surgery: II

*To the Editor:*—If one believes that preoperative pregnancy testing is a necessity, then "closing the window" as tightly as possible seems mandatory. Available urine test kits detect human chorionic gonadotropin (hCG) levels of 25–50 mIU hCG/ml. Manley *et al.*<sup>1</sup> tested their patients "within 6 days of the scheduled surgery." hCG concentrations begin to appear 6–7 days after conception at about 10 mIU hCG/ml and double every 1.4–2 days in early pregnancy.<sup>2</sup> Therefore, during a 6-day "window" between testing and surgery, hCG concentrations easily can go from undetectable to detectable (*i.e.*, from 10 to 160 mIU hCG/ml) in the first 2 weeks after conception. It thus seems imperative to perform the test on the day of surgery to identify as many pregnant patients as possible. The test we use at our facility (Abbott TestPack Plus hCG-URINE, Abbott Laboratories, Abbott Park, IL) is performed quickly by our preoperative nurses.

**Michael K. Rosenberg, M.D.**  
Medical Director

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## Preoperative Pregnancy Testing in Ambulatory Surgery: III

*To the Editor:*—We found the paper by Manley *et al.* to be timely and informative.<sup>1</sup> We are trying to develop a rational policy toward preoperative testing, especially as it pertains to pregnancy testing in

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cycles, language barriers, therefore, urine or s. In the authors' routine days of the scheduled the day of surgery. I be pregnant, resulting We are curious how for pregnancy were surgery. If a majorit of surgery, should w nancy before the da mediately on arrival the night before?

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*In Reply:*—Lewis negative predictive version of our origi consideration. Ho from a preliminary specificity and the p testing. Inclusion o was not an endorse of the specificity o 179 patients, incl test result in a pat interpreted as a tru ificity would have larger data: 100% tionable result had predictive value o laboratory pregnan neither false nor a of false result betw

The scope of ou of previously unsu bulatory surgery d testing. We unders ificity of pregnanc alence of pregnan examine the predi ing in ambulatory The letters from of performing pre possible, preferab often was perform often several days We agree that "cl erable, especially accurately and qu and Herschman ra

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cycles, language barriers, fear of others knowing of sexual activity); therefore, urine or serum pregnancy testing is done preoperatively. In the authors' routine, pregnancy testing was performed within 6 days of the scheduled surgery if possible; otherwise, it was performed the day of surgery. In all, 7 of 2,056 patients (0.3%) were found to be pregnant, resulting in the cancellation of all 7 planned procedures. We are curious how many of these seven patients who tested positive for pregnancy were discovered by testing performed on the day of surgery. If a majority of them were diagnosed by testing on the day of surgery, should we reconsider ever testing these patients for pregnancy before the day of the scheduled procedure, or test them immediately on arrival for their procedure or with home testing kits the night before?

**Norman J. Zeig, M.D.**  
Chair

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*In Reply:*—Lewis and Cooper raise a valid concern of positive and negative predictive values. Although briefly addressed in an earlier version of our original manuscript, it was dropped because of editorial considerations. However, we are concerned about their use of data from a preliminary study<sup>1</sup> presented in abstract form to calculate specificity and the positive predictive value of preoperative pregnancy testing. Inclusion of the abstract by Malviya *et al.*<sup>2</sup> in our discussion was not an endorsement of their data to serve a role in calculation of the specificity of pregnancy testing. Their data, which examined 179 patients, included a single case of a "questionably positive" test result in a patient who was not pregnant. Had this result been interpreted as a true negative rather than a false positive, their specificity would have been the same as that calculated from our much larger data: 100%. Because of small sample size, the single questionable result had a major impact on specificity and, thus, the positive predictive value of the test. In our series of 2,056 patients, clinical laboratory pregnancy testing of UCG in either urine or blood yielded neither false nor ambiguous results, with a 95% confidence interval of false result between 0.0 and 0.0018.

The scope of our study was to examine the incidence and impact of previously unsuspected pregnancy in patients scheduled for ambulatory surgery discovered during routine preoperative pregnancy testing. We understand Lewis and Cooper's concerns about the specificity of pregnancy testing in a population with an overall low prevalence of pregnancy, and perhaps further studies are warranted to examine the predictive value of routine preoperative pregnancy testing in ambulatory surgery patients.

The letters from Rosenberg and Zeig and Herschman raise the issue of performing pregnancy testing as close to the time of surgery as possible, preferably on the same day. In our study, pregnancy testing often was performed at the time of their laboratory testing, albeit often several days in advance, to lessen inconvenience to the patient. We agree that "closing the window as tightly as possible" is preferable, especially considering the available testing kits, which can accurately and quickly be used in the ambulatory surgery unit. Zeig and Herschman raise the provocative suggestion regarding the use

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of home testing kits. We are not confident that this is an acceptable alternative because test performance and interpretation would be unmonitored.

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