Title: CORRELATION BETWEEN TWO PHYSICAL STATUS MEASURES AND THE ASA PHYSICAL STATUS SCORE

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In 1988, HCFA became concerned that additional payment for ASA physical status (ASA PS) classification III, IV, and V was causing status grade inflation. Further, although the ASA classifications were reproducible in any one hospital, the same patient was graded differently in other hospitals.[1] And finally, despite the fact that an ASA classification correlated with mortality in any one hospital, the same classification and same procedure could result in more than a 20-fold range of mortality between hospitals. For these reasons, HCFA felt there was a need for an objective ASA rating. Working with two consultants, the ASA Committees on Government Affairs and Economic Affairs developed an objective scale for determining a patient's physical status (Ob-ASA). Another scale, Health Quiz ASA (HQ ASA), was developed by our group with the use of a patient questionnaire after modification of the Ob-ASA to include medically important symptoms representing several diseases. We tested the hypothesis that either Ob-ASA or HQ ASA would correlate with current ASA physical status ratings.

Two hundred patients at a preoperative clinic, age 8 years or older, were enrolled in the study after institutional approval and with patient consent. All patients completed an automated questionnaire, the HealthQuiz, or had a family member complete the HealthQuiz for them. The HealthQuiz develops a risk index by application of an algorithm that considers symptoms of hypertension, CHF, ischemic cardiac disease, hepatic disease, diabetes, renal disease, pulmonary dysfunction, and CNS dysfunction.

The Ob-ASA was calculated from chart review and inquiries by a student questioner. The Ob-ASA includes measures of coronary artery disease, hypertension, pulmonary disease, renal and electrolyte disorders, hepatic disease, and diabetes.

Three percent of patients were excluded from the study because they could not take the HealthQuiz, and another 3 percent, because they gave contradictory responses to HealthQuiz questions.

The Ob-ASA and the HQ ASA correlated with the ASA physical status with coefficients of .93 and .96, respectively. Both had different slopes from that of the ASA physical status, with the Ob-ASA giving lower grades than the ASA or HQ ASA for patients with neurologic disease. The study was potentially biased by exclusion of patients who had come from an intensive care unit. With these exclusions, it appears that either index warrants a trial as an objective predictor of risk and outcome.

1. Anesthesiology 49:239-243, 1978

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Title: HOW FREQUENTLY DO ASYMPTOMATIC PATIENTS BENEFIT FROM THE PURSUIT OF ABNORMALITIES IN THEIR PREOPERATIVE TEST RESULTS?

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Many studies cite the incidence of abnormalities discovered by preoperative laboratory testing, but few of these studies segregate patients with test abnormalities by their histories alone. Therefore, the incidence of asymptomatic individuals whose laboratory test results are abnormal is very difficult to ascertain. We might predict that 1 to 5 percent of tests performed would yield abnormal results, assuming Gaussian distributions and the determination of normal ranges as mean ± 2 or 3 SD, but we do not know if laboratory data from asymptomatic individuals seeking medical care follows a Gaussian distribution. Further, data on the number of abnormalities that are so far outside the normal range as to justify further pursuit or a change in care are either incomplete or virtually unobtainable. We used a portable, automated device to obtain a medical history from patients to test the hypothesis that asymptomatic disease is rare.

With the approval of the review board of each institution and with patient consent, 991 patients completed an automated health history questionnaire, HealthQuiz. This device provided a printout of suggestions for preoperative laboratory tests based on an algorithm utilizing the patient's symptoms. Surgeons and/or anesthesiologists also selected tests for each patient. Abnormal and significantly abnormal test results were noted. Significantly abnormal results are those values, outside of reported limits, that might warrant treatment of a specific abnormality.[1] Patients' anesthesiologists, blinded to the method of test selection, were queried postoperatively to determine whether any abnormal test result changed patient management and if so, whether such a change resulted in harm or benefit to the patient.

Of the total of 12,323 test results obtained for these 991 patients, 984 (8%) were abnormal; 409 (3.3%), significantly abnormal; and 109 (0.9%) affected care. For asymptomatic patients, only 66 (1.2%) of 5,727 test results were significantly abnormal, and 10 (0.17%) affected care; 4 asymptomatic patients were harmed, whereas only 2 asymptomatic patients benefited from a change in care. Of the tests not routinely obtained by the surgeons or anesthesiologists but indicated by the HealthQuiz history, 30 (6.2%) of 484 test results were significantly abnormal, and 19 (3.9%) affected care. Fourteen patients benefited ($P \leq 0.05$) and none were harmed by a change in care.

This study suggests that disease not detectable by thorough history is rare. Even in cases of hepatic or cardiac dysfunction, patients had symptoms or other factors in history that suggested the need for every LFT and ECG that proved significantly abnormal in this population. More striking, perhaps, was the fact that symptoms elicited by an automated history invariably predicted potential laboratory test abnormalities, which, when identified, resulted in benefit to patients.

Reference:

1. JAMA 253:3576-3581, 1985.