Radiographic Criteria in ARDS

To the Editor:

The article by Rubenfeld et al in a recent issue of CHEST (November 1999)1 highlighted a key problem when applying clinical parameters to the definition of a syndrome.

In the daily care of an ARDS patient, physicians of various specialties and other health-care personnel are often the first individuals reviewing the chest x-ray (CXR). However, it is the interpretation from the radiology department that is officially used in the patient records.

One useful modification to the CXR criteria may be to specify that the official radiographic interpretation by a radiologist be used in the definition of ARDS. Perhaps we also need to develop and validate more explicit and concrete CXR criteria within the discipline of radiology so as to eliminate interobserver variability.2

Developing explicit and reproducible diagnostic criteria is the only way we can apply the American-European Consensus Conference definition to research protocols among multiple study centers.

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To the Editor:

We agree with the comments by Dr. Westney. As discussed in our article, we believe that the solution to the interobserver variability problem in the radiographic definition of ARDS is more explicit definitions that have been subjected to empirical validation. It is particularly important that any subsequent attempt to operationalize this definition be accompanied by example radiographs.

As data become available showing improved outcome from various interventions in patients with acute lung injury and ARDS, it will be essential for clinicians at the bedside to be able to identify the same patients in the same time frame as those who benefited from the clinical trial.

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Screening in Hereditary Hemorrhagic Telangiectasia Patients

To the Editor:

We read with great interest the article by Kjeldsen et al in CHEST (August 1999)3 regarding screening for pulmonary arteriovenous malformations (PAVMs). It attempts to address one of the important issues in caring for people with hereditary hemorrhagic telangiectasia: the approach to screening for PAVMs. However, it falls short on several counts.

This article evaluated the performance of pulse oximetry (supine and upright), as well as PaO2 on room air and 100% oxygen, in patients with right to left shunt on contrast echocardiography. The authors assumed the sensitivity of contrast echocardiography to be 100%, despite the lack of published data on the sensitivity of contrast echocardiography for detecting intrapulmonary shunt. We have published, in abstract form, results to indicate that though contrast echocardiography is a useful screening tool, it is clearly not 100% sensitive. Although the study was designed to evaluate the performance of various screening tests in a group of patients with positive contrast echocardiography, the authors concluded that the strategy of initial contrast echocardiography followed by 100% oxygen is the best strategy. Since the population of contrast-negative patients was not evaluated, they cannot draw conclusions about the performance of this screening strategy.

Our second concern involves their interpretation of the PaO2 on 100% oxygen. Our own experience has shown this to be a difficult test to perform reliably and that normal limits should be established using local results and a receiver operator characteristic curve. The authors have selected a cutoff point of 500 mm Hg without any justification. This is considerably lower than the theoretical normal cutoff. Since sensitivity of screening tests is so important in these patients, the justification of the cutoff point is essential.

Finally, the authors have reported sensitivity and specificity of the various screening tests despite the fact that the reference standard, pulmonary angiography, was not performed in all subjects. Only subjects who had positive contrast echocardiography underwent pulmonary angiography. This is not the conventional method for reporting sensitivity and specificity and leads to an overestimation of sensitivity and an underestimation of specificity.

We are left with the important question as to whether or not contrast echocardiography alone is adequate screening.

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To the Editor:

So far, the major concern of using contrast echocardiography (CE) as a screening tool has been that the procedure may be too sensitive, producing too many false-positive results. Faughnan et al found 1 false-negative study out of 14. However, their CE procedure is different from ours, which may explain their findings.