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REFERENCES


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REFERENCES


To the Editor:

We read with interest the article by Papageorgiou et al (November 2005)1 reporting that the measurement of oxidative stress levels with a rapid commercially available method (d-ROMs test; Diacon; Grosseto, Italy) was highly repeatable in the patients studied and may serve as a marker for differentiation between exudates and transudates in clinical practice.

Unfortunately, the basic principle of the d-ROMs test is invalid. In this method, overall oxidative stress is measured indirectly by measuring the level of total hydroperoxides. However, the alchilamine used as a chromogen in this method is also a substrate for the ceruloplasmin (ferroxidase) enzyme, which is abundantly present in serum; the type of buffer used and its pH are more appropriate for ferroxidase activity. This is borne out by the fact that a significant positive correlation between the assay results and ferroxidase activity has been found (r = 0.911; p < 0.001; n = 100) [Table 1, Fig 6 in the article by Erel2]. Also, this assay is inhibited by sodium azide (Fig 3 in the article by Erel2); no response was observed during copper-induced lipoprotein autooxidation (Fig 8 in the article by Erel2). Also, there were no appropriate linear responses for H2O2, t-butyl hydroperoxide, or cumene hydroperoxide solutions. Further, there was a lack of response during copper-induced lipoprotein autooxidation (Fig 8 in the article by Erel2).

In a study by Calikoglu et al,2 it was shown that acute-phase reactants, especially ceruloplasmin, have a high sensitivity, specificity, and area under the receiving operator characteristic curve (92%, 95%, and 0.98, respectively) in the discrimination of exudative pleural effusions. These values are very similar to the findings of Papageorgiou et al1 (96%, 96%, and 0.99, respectively). Moreover, the significance of the ceruloplasmin values between exudates and transudates (Table 2 in the article by Calikoglu et al2) were surprisingly similar to the findings of Papageorgiou et al1 for these two groups.2 It is apparent that the results published by Papageorgiou et al1 essentially reflect ceruloplasmin activity and not oxidative stress.

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To the Editor:

We appreciate Dr. Harma’s comments regarding our article on oxidative stress levels in pleural effusions as a marker for the differentiation between exudates and transudates.1 The d-ROMs test (Diacon; Grosseto, Italy) may indeed measure ceruloplasmin oxidase activity besides the total level of hydroperoxides, and this is known from the initial study2 that has validated the d-ROMs method. However, the contribution of ceruloplasmin oxidase activity to the typical change of absorbance at the 505 nm of the d-ROMs test, although not negligible, is relatively small, especially due to the fact that in the d-ROMs method for the serum the sample is 100-fold diluted.2 The same probably applies for the pleural fluid samples, as we have used the same dilutions.

The correlation between ceruloplasmin oxidase activity and the d-ROMs test has not been shown in clinical practice. In hemodialyzed patients, for instance, the d-ROMs values are increased,3 whereas the ceruloplasmin oxidase activity is reduced.3 Additionally, d-ROMs have been validated in large populations of healthy subjects, alcohol abusers, and in various disease states. Interestingly, d-ROMs are increased in patients undergoing prolonged hyperbaric oxygen treatment and correlate with malondialdehyde levels, another marker of oxidative stress.3 Therefore, the similarities between the diagnostic performance of d-ROMs and ceruloplasmin for the differentiation between exudative and transudative pleural effusions referred by Harma et al are only speculative, and further research is needed in that direction.

In our study, we used d-ROMs as a marker of overall oxidative stress in the pleural fluid, and we concluded that this method is repeatable and represents an excellent marker for the differentiation of exudates and transudates. We believe that further research is needed for the clarification of the mechanisms of d-ROMs Test Detects Ceruloplasmin, Not Oxidative Stress

To the Editor:

We read with interest the article by Papageorgiou et al (November 2005)1 reporting that the measurement of oxidative stress levels with a rapid commercially available method (d-ROMs test; Diacon; Grosseto, Italy) was highly repeatable in the patients studied and may serve as a marker for differentiation between exudates and transudates in clinical practice. Unfortunately, the basic principle of the d-ROMs test is invalid. In this method, overall oxidative stress is measured indirectly by measuring the level of total hydroperoxides. However, the alchilamine used as a chromogen in this method is also a substrate for the ceruloplasmin (ferroxidase) enzyme, which is abundantly present in serum; the type of buffer used and its pH are more appropriate for ferroxidase activity. This is borne out by the fact that a significant positive correlation between the assay results and ferroxidase activity has been found (r = 0.911; p < 0.001; n = 100) [Table 1, Fig 6 in the article by Erel2]. Also, this assay is inhibited by sodium azide (Fig 3 in the article by Erel2); no response was observed during copper-induced lipoprotein autooxidation (Fig 8 in the article by Erel2). Also, there were no appropriate linear responses for H2O2, t-butyl hydroperoxide, or cumene hydroperoxide solutions. Further, there was a lack of response during copper-induced lipoprotein autooxidation (Fig 8 in the article by Erel2).

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Is Endobronchial Ultrasound Necessary for Transbronchial Lung Biopsy in Solitary Pulmonary Nodule?

To the Editor:

I read the article “Endobronchial Ultrasound-Guided Transbronchial Lung Biopsy in Fluoroscopically Invisible Solitary Pulmonary Nodules” by Herth et al (January 2006) with interest. In consideration of the outcomes of this article, several questions arose, as follows:

1. With lesion size being 1.4 to 3.3 cm, why were lesions not seen under fluoroscopy in 54 of 138 patients? Why were they entirely indiscernible or somewhat visible?

2. The authors noted that the “suspected area” was approached by a catheter with an ultrasound probe. Was fluoroscopy used in any way during the procedure? Why was the suspected area not investigated initially by obtaining the four to six specimens without endobronchial ultrasound, including cytology?

3. Six apiical lesions from both upper lobes were not found to be abnormal by ultrasound. Was this due to the fact that the catheter and ultrasound probe were not able to reach the suspected area?

The design of this study cannot result in any of the following potential recommendations:

1. Replace the conventional method. The new method is better, safer, and more accurate. It should be used in all patients.

2. The new method should be additive to the conventional method. It increased the yield in some circumstances and can be used in selected cases.

3. This new technique is neither able to replace nor to be added to the conventional method.

The technology for diagnosing these lesions has evolved over the past several decades. The major determining factor for diagnostic yield is whether the sampling device can reach the lesion or get close to it, confirming whether the lesion is reached or not by any means beyond fluoroscopy before sampling is of great interest. At least it might have the “ROSE” (rapid on-site cytologic evaluation) effect with lesser specificity.

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To the Editor:

We thank Dr. Wang for his thoughtful comments regarding our recent study (January 2006) showing the benefit of endobronchial ultrasound guidance for the transbronchial biopsy of solitary pulmonary nodules that are not visible on standard fluoroscopy.

In answer to the questions posed, we offer the following comments: the lesions were not visible at all during the procedure, which is certainly a well-known problem for most bronchoscopists. The suspected area was determined as the most likely lobe and segment from the available static imaging for each patient. Also, the lesions in the upper lobes that Dr. Wang is referring to were not found to be normal but rather could not be normal.