Effect of Obesity on Red Cell Mass

TO THE EDITOR: Leslie et al. (*1*) are certainly correct in emphasizing that obesity will cause errors in calculating predicted blood volumes if normal values of red cell mass are calculated as a linear function of body weight alone. However, in their conclusion that "Commonly used reference ranges generate inconsistent results when extrapolated to obese patients," the authors overlook the most recent recommendation for calculating normal blood volume, which takes obesity into account and offers a more consistent reference range. The authors refer to the 1980 recommendations of the International Committee for Standardization in Haematology (ICSH) (*2*), which calculate normal blood volumes in terms of body weight. However, they fail to mention the superseding ICSH recommendations of 1995 (*3*), which are based on a review of several investigations of normal blood volume and consolidation of data that include some obese subjects. That latest report recommends the use of regression equations based on body surface area (calculated from height and weight) to arrive at the predicted normal values for an individual.

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Peter B. Schneider
U Mass Memorial Medical Center
Worcester, Massachusetts

REPLY: We thank Dr. Schneider for drawing attention to this omission in our article (*1*). The updated recommendations of the ICSH (*2*) are based on a careful reanalysis of pooled data from many of the studies that we considered individually. As such, we agree that they provide the "best" currently available normative regression equations for blood volumes.

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William D. Leslie
Jacqueline O. Dupont
Anne E. Peterdy
St. Boniface General Hospital
Winnipeg, Manitoba, Canada

Mammography and ^{99m}Tc-MIBI Scintimammography in Suspected Breast Cancer

TO THE EDITOR: We read with great interest the article by Prats et al. (*1*) on the combination of mammography and ^{99m}Tc-methoxyisobutyl isonitrile (MIBI) scintimammography to prevent unnecessary biopsies in patients with suspected breast cancer. The authors evaluated 90 patients with suspected breast cancer involving 97 lesions and suggested that biopsies should be performed on lesions that have a high suspicion of malignancy as well as those with low or indeterminate suspicion that are smaller than 1 cm or with positive scintimammography results. This protocol would reduce the total number of biopsies by 34%.

We have achieved similar results in our study (*2*) using a "mamma malignancy index" (MMI) that takes into account the results of scintimammography, mammography, and mammosonography. The results of these modalities were scored from 0 to 2 (0 = negative or low suspicion of malignancy, 1 = indeterminate, and 2 = positive or high probability of malignancy). An MMI was calculated by simply adding the respective scores of each investigation. The prospective study comprised 64 patients with suspect lesions in the breast. Prone breast scintigraphy was performed using the technique of Khalkhali et al. (*3*). The results suggested a high negative predictive value (100%) for patients with an MMI of <2.

In women with dense breasts, mammography has a false-negative rate of 25%–45% (*4*), but the combination of mammography and mammosonography is known to increase the number of occult breast cancer cases detected (*5*). Therefore, we included the results of sonography for calculation of the MMI to characterize a breast lesion as benign and thus prevent unnecessary biopsies. To date, we have examined 94 patients. Biopsies revealed malignancies in 30 patients and benign lesions in 64 patients. Forty-nine patients with an MMI of 0–1 had negative biopsies. Twenty-nine patients had an MMI of 2–3; malignant lesions were revealed in 14 of these patients after biopsy. All patients with an MMI of 4–6 (16/94) had malignancies.

Tumor sizes ranged from 6 to 35 mm in diameter. The negative predictive value in the group of patients with an MMI of 0–1 was again 100%; use of this index could have prevented 52% of the biopsies in this patient sample. The combination of 3 independent imaging modalities established the high indicative value of the MMI. For instance, indeterminate mammography and sonography in 2 patients and indeterminate scintigraphy and sonography in 1 patient indicated correctly the need for biopsy in these 3 patients with malignant breast lesions. On the other hand, negative sonographic results facilitate decision making, which could prevent open biopsies in the benign cases.

In conclusion, we have found that inclusion of mammosonographic results in the MMI improves decisively the discriminatory value of this index by preventing unnecessary biopsies, thus reducing costs and patient inconveniences.

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Siroos Mirzaei
Peter Knoll
Rainer Walter Lipp
Horst Köhn
Ludwig Boltzmann Institute of Nuclear Medicine
Wilhelminenspital
Vienna, Austria

REPLY: We have read with much attention the letter by Mirzaei et al. referring to our article "Mammography and ^{99m}Tc-MIBI scintimammography in suspected breast cancer" (*1*). We agree with their comments and believe that the "mamma malignancy index" they describe can be a useful tool in reducing the number of breast biopsies performed in benign lesions. In addition, it would be of interest to learn whether they have found any variation in their results depending on the lesion size. We encourage the authors to publish the results obtained using this new index.

Our group, in the same manner as that of Mirzaei et al., is evaluating the usefulness of scintimammography in the assessment of dense breasts. In a group of 47 patients with dense breasts, we have not found any significant differences in the scintimammography results that are dependent on the density of the breast tissue (sensitivity, 92%; specificity, 80%) (*2*).

In conclusion, we believe that scintimammography, mammosonography, and the combined use of both techniques can increase the positive predictive value of mammography and assist in the evaluation of those mammographies that are difficult to assess, such as in the case of patients with dense breast tissue.

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Enrique Prats
Maria Dolores Abós
Fausto García
Javier Banzo
University Teaching Hospital
Zaragoza, Spain