In a prospective study, in order to examine the relationship between body mass index (BMI) and mortality among ICU patients, Goulenok et al\textsuperscript{1} found obesity (ie, BMI $> 27$) to be associated with a poorer clinical outcome. Surprisingly, their results are in contrast with the results from other investigations.\textsuperscript{2,3}

Goulenok et al\textsuperscript{1} reported that body weight and size were measured for all patients. Importantly, the investigators measured weight and height, instead of estimating these parameters, to calculate the BMI.\textsuperscript{4} However, we still have some doubts about whether the BMI was calculated adequately in all study subjects.

**References**


**Overweight in ICU Patients**

**Is the Body Mass Index Reliable?**

**To the Editor:**

In a prospective study, in order to examine the relationship between body mass index (BMI) and mortality among ICU patients, Goulenok et al\textsuperscript{1} found obesity (ie, BMI $> 27$) to be associated with a poorer clinical outcome. Surprisingly, their results are in contrast with the results from other investigations.\textsuperscript{2,3}

Goulenok et al\textsuperscript{1} reported that body weight and size were measured for all patients. Importantly, the investigators measured weight and height, instead of estimating these parameters, to calculate the BMI.\textsuperscript{4} However, we still have some doubts about whether the BMI was calculated adequately in all study subjects.
If weight was truly measured in all patients, did the investigators adjust weights for fluid balances? This is not a trivial comment. The most severely sick patients (ie, those with the greatest risk for death) frequently need more fluids (especially when saline solutions are used for fluid therapy). This raises the total measured body weight and, thus, the BMI. Hence, BMI could be a confounder in this study.

Let us give two examples to illustrate the problem. After therapy with 7 L fluid, a person with a height of 6 feet 3 inches and a weight of 205 lb will have a BMI of 27.5, instead of 25.6, and a person with a height of 5 feet 11 inches and a weight of 183 lb will have a BMI of 27.6, instead of 25.6. Thus, more severely sick patients might become “obese” because they are sick.

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To the Editor:

We thank Dr. Dube for his very interesting comments about our article (April 2004). Indeed obesity is associated with physiologic and metabolic aberrations, such as impaired glucose metabolism, or comorbidity, such as hypertension, depression, or psychoneurotic illness. These factors probably play a major role in the increased mortality of this specific population as they are well-known factors affecting glucose metabolism in ICU patients. Unfortunately, we did not collect these data in our patients. We now would like to perform a multicenter prospective study that would aim to identify comorbidity factors that may be associated with the increased mortality observed in overweight ICU patients. Likewise, it would probably be interesting to register patients’ socioeconomic status as that may also interact with outcome. We fully agree with Dr. Dube that individualizing these factors probably will help doctors to provide specific care for overweight ICU patients. In this setting, body mass index (BMI) is an easy variable to collect in any ICU patient and could be used as an alarm for practitioners.

We also thank Drs. Schultz and Spronk for their very interesting comments about our article. To our knowledge, there are actually not just two but nine published articles1,4–8 or abstracts3,10 including our study, that have analyzed the influence of overweight in ICU patients. The contradictory results provided by these different publications can be explained in part by differences in the terms used to study this population, and also by the timing and methods used for the evaluation of BMI. The large preponderance of different diseases in our study population (94.3%) probably influenced our results compared to those of other studies. Weight and size were measured for all patients at the time of ICU admission and that may also constitute a difference with the other published studies. We also tried to minimize the influence of fluid loading therapy administered soon after ICU admission. On the other hand, volume depletion (ie, diarrhea, bleeding, vomiting, and diuretic treatment) was not taken into consideration in the calculation of BMI. The effort to integrate the amount of volume depletion and fluid therapy into the estimation of body weight is probably too difficult. The early measurement of BMI at ICU admission actually seems to be the best and easiest method for minimizing the influence of these factors.

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Endobronchial Endometriosis Nd-YAG Therapy vs Drug Therapy

To the Editor:

I read with great interest the selected report by Puma et al in a recent issue of CHEST (September 2003). They described a