Body mass index measurements have limited value for the assessment of body composition in rheumatoid arthritis: comment on the article by Wolfe and Michaud

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To the Editor:

We read with great interest the article by Wolfe and Michaud published recently in Arthritis Care & Research. We would like to compliment the authors on their interesting study demonstrating that overweight and obesity in patients with rheumatoid arthritis (RA) reduce the risk of mortality and, conversely, increase the risk of certain comorbid conditions.

Wolfe and Michaud gave several explanations for the reduced mortality risk in overweight and obese patients; however, to our surprise, none were directed at the value of body mass index (BMI) as a measure for overweight or obesity. Although BMI is widely used to assess under- and overweight in all populations, there is an increasing understanding that BMI is not a valid tool to assess body composition, since it does not distinguish between muscle mass and fat mass.

In past decades, a lot of research has been done in the field of rheumatoid cachexia or rheumatoid cachectic obesity, described as the condition of involuntary loss of muscle mass with little or no weight loss in the presence of stable or increased fat mass that is frequently found in RA patients. Our research group has recently confirmed high prevalence rates of overweight (57%) and obesity (18%) in RA patients in combination with a decreased fat-free mass index (FFMI; <10th percentile: 20%) and a high fat mass index (>90th percentile: 31%).

Although BMI was probably the only measure of body composition available in the study by Wolfe and Michaud, it has limited value for the assessment of body composition in RA patients, since BMI fails to identify abnormal body composition and therefore the effect of abnormal body composition on mortality in RA patients. Stavropoulos-Kalinoglou and colleagues have suggested that BMI cutoff points should be reduced by 2 kg/m² in RA patients to accurately predict body fat, an important aspect of cardiovascular morbidity.

Preferably, one would use FFMI when evaluating body composition in RA patients, since this parameter has been demonstrated to be useful in identifying individuals with decreased fat-free mass despite having a normal BMI. FFMI can be assessed by dual x-ray absorptiometry (DXA), often used as the gold standard for body composition. Because DXA is relatively expensive, bioelectrical impedance analysis (BIA) might be a second-best option to assess body composition in clinical practice. A relatively good agreement between both methods was described at group level in a recent study of RA patients, although BIA measurements are not yet validated in RA (work that is currently being performed by our research group in Amsterdam).

Based on results from the current available literature, we conclude that the body composition of RA patients should not be assessed by BMI when studying relative risks between body composition and mortality in RA. Assessment of FFMI, on the other hand, might be very useful in this population.
References


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BMI has limited value in RA