

Re: Relation of Body Mass Index to Outcome in Patients With Known or Suspected Coronary Artery Disease

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Diagnostic performance of body mass index to detect obesity in patients with coronary artery disease

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Background: Emerging evidence suggests that a mildly elevated body mass index (BMI), is related to improved survival and fewer cardiovascular events in patients with coronary artery disease (CAD). We hypothesize that these results are related to the poor diagnostic performance of BMI to detect adiposity, especially in the intermediate BMI ranges.

Methods and Results: A cross-sectional study of 95 patients with CAD referred to phase II cardiac rehabilitation. Body fat (BF)% was estimated by air displacement plethysmography. Height, weight, BMI and waist circumference were measured the same day. We calculated the correlation between BMI and both, BF% and lean mass and assessed the diagnostic performance of BMI to detect obesity defined as a BF% > 25% in men and > 35% in women. Although BMI had a good correlation with BF

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% ($r = 0.66$, $P < 0.0001$), it also had a good correlation with lean mass ($r = 0.41$, $P < 0.0001$), and BMI failed to discriminate between both (P -value = 0.72). A BMI ≥ 30 kg/m² had a good specificity (95%; 95% CI, 83–100) but a poor sensitivity (43%; 95% CI, 32–54) while a BMI ≥ 25 kg/m² had a good sensitivity (91%; 95% CI, 84–97) but a poor specificity (65%; 95% CI, 42–88) to detect BF%–obesity.

Conclusions: In patients with CAD, BMI does not discriminate between BF% and lean mass, and a BMI < 30 kg/m² is a poor index to diagnose obesity. These findings may explain the controversial findings that link mild elevations of BMI to better survival and fewer cardiovascular events in patients with CAD. Body composition techniques to accurately diagnose obesity in patients with CAD might be necessary.