Comparison of the IBW, using the index of Broca, with LBW, using electrical impedance, for medication dosage in morbidly obese patients.

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Background

Ideal body weight (IBW) can be calculated with the index of Broca.

✓ men: length (in cm) minus 100

✓ women: length minus 100 plus 10 %

The IBW is used to calculate the dosage of most non fat-soluble medications.

Lean Body Weight (LBW) is the difference between real body weight (RBW) and fat mass (weight of all organs, bone and muscle, excluding fat)

Obese patients have an increased amount of both fat and lean body weight when compared with non-obese patients of similar age, height and gender. The increase of LBW can account for as much as 20 to 40 % of the excess RBW (1), especially in body builders.

LBW is therefore the correct way to measure the distribution space for water soluble medications. However, accurately measuring LBW is relatively difficult.

The goal of the study is to measure the difference between IBW and LBW in morbidly obese patients undergoing bariatric surgery.

Methods

This study has been approved by the Hospital Ethical Committee. 100 morbidly obese patients (BMI > 40 kg/m²) operated for a gastric bypass gave written informed consent to participate. Patients were aged between 19 and 60 years old. They were scheduled for laparoscopic bariatric surgery. Prior to surgery, BMI, fat percentage, LBW, RBW and IBW were calculated.

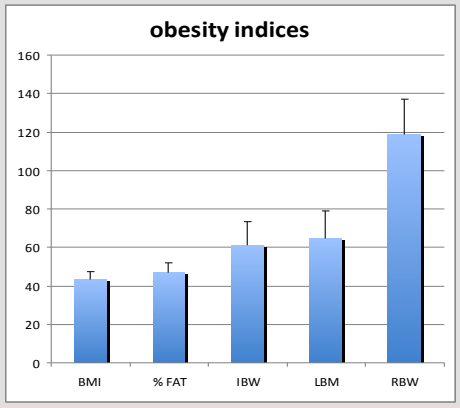
We measured lean body mass and fat percentage according to electrical impedance with Lukaski's formula. (2).

Results

✓ Total fat mass was 47 +/- 5,4 % in patients with a BMI of 43,3 +/- 3,8 %.

✓ No significant difference between

- IBW (61 +/- 13 kg) and
- LBW (65 +/- 14 kg) for a
- RBW of 119 +/- 18 kg.



Discussion

Theoretical LBW should increase in morbidly obese patients. However for patients undergoing bariatric surgery with an average BMI of 40, the difference between IBW and LBW was not significant and only 6.6%. These results are not in accordance with Savarese et al.

Conclusion

IBW calculated with the index of Broca is a suitable clinical method to calculate water soluble distribution space for patients undergoing bariatric surgery.

References

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