



Original article

Do patients lose weight after total knee replacement?[☆]



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ABSTRACT

Objective: Several studies show that patients undergoing total knee arthroplasty (TKA) tend to maintain or gain weight after the procedure, which would result in increased wear of the prosthesis and new surgical interventions in a smaller period of time in comparison with patients with adequate body mass index (BMI). The aim of this study was to investigate the effect of TKA surgery on these patients' BMI.

Methods: Initially the records were analyzed, chosen at random from 91 patients undergoing TKA during the period from August 2011 to July 2013. Patients were stratified by BMI as normal weight (BMI between 20 and 25), overweight (BMI between 25 and 30), and obesity (BMI > 30). They were re-evaluated in a minimum period of 18 months.

Results: The mean age of the sample population was 68.1 years; 69.1 for men and 67.2 for women. The mean preoperative BMI was 27.24 kg/m². Among the study participants, in the preoperative period, 17 patients had normal weight, 65 were overweight, and nine were obese. Postoperative analysis showed weight loss in 41 patients (46%), and weight gain in 50 patients (54%). The mean postoperative BMI was 27.16 kg/m², in general, experiencing a slight decline in the mean BMI of 0.08 kg/m².

Conclusion: Patients who underwent TKA did not achieve significant reduction in BMI after surgery.

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Os pacientes emagrecem após artroplastia total de joelho?

R E S U M O

Palavras-chave:

Obesidade
Artroplastia do joelho
Índice de massa corporal

Objetivo: Diversos estudos demonstram que pacientes submetidos à artroplastia total do joelho (ATJ) tendem a manter ou a ganhar peso corporal após o procedimento, o que acarretaria aumento no desgaste da prótese e novas intervenções cirúrgicas em um tempo inferior àqueles que se mantêm em índice de massa corporal (IMC) adequado. O objetivo deste estudo foi investigar o efeito da cirurgia de ATJ no IMC desses pacientes.

Métodos: Inicialmente foram analisados os prontuários, escolhidos ao acaso, de 91 pacientes submetidos à ATJ de agosto de 2011 a julho de 2013. Os pacientes foram estratificados pelo IMC como peso normal (IMC entre 20-25), sobrepeso (IMC entre 25-30) e obesidade (IMC > 30) e reavaliados em 18 meses no mínimo.

Resultados: A média de idade da população amostral foi de 68,1 anos, 69,1 para homens e 67,2 para mulheres. O IMC médio pré-operatório foi de 27,24 kg/m². Entre os participantes do estudo, no período pré-operatório, 17 pacientes apresentavam peso normal; 65, sobrepeso e nove, obesidade. A análise pós-operatória demonstrou diminuição no peso em 41 pacientes (46%) e ganho ponderal em 50 (54%). O IMC médio pós-operatório foi de 27,16 kg/m², de forma geral, ocorreu uma ligeira queda do IMC médio em 0,08 kg/m².

Conclusão: Os pacientes submetidos à ATJ não obtiveram redução significativa do IMC após o procedimento cirúrgico.

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Introduction

Obesity is a serious problem in both developed and developing countries. It is likely one of the factors that is most associated with the increase in the morbimortality of the global population nowadays.¹ The increase in obesity will likely cause an increase in the incidence of knee osteoarthritis and hence in the number of total knee arthroplasties (TKA).²

Evidence indicates that the relative risk to undergo a TKA varies from 3.20 for overweight individuals to 32.73 in individuals with morbid obesity grade III.³ High body mass index (BMI) has been shown to be a risk factor for worsening of knee osteoarthritis.¹⁻⁵ The relationship between arthroplasty and increased BMI is therefore increasingly important in relation to the outcomes in the postoperative period and the expectations of patients.⁵

To date, the gold standard treatment for obese patients with knee osteoarthritis remains the subject of debate, since patients with a high BMI (>30 kg/m²) are at higher risk of developing complications after TKA.⁶ Kerkhoffs et al.⁷ suggest that these patients should first undergo a body weight control program in order to reduce the risk of postoperative complications, which is why many surgeons are reluctant to perform TKA in this population.⁸ The impact of body weight on TKA has not been fully explored. Clinically significant body weight gain after TKA could pose potentially harmful health risks.⁹

However, preoperative weight loss in TKA is an important measure that should be strongly encouraged, since high BMI has been shown to be a risk factor for worsening knee osteoarthritis.¹⁰⁻¹⁵ The benefits of weight loss include decreased surgical risk and increased longevity of the prosthetic implant. However, several studies have demonstrated

that patients who undergo TKA tend to maintain or gain body weight after the surgical procedure when compared with the period before the placement of the prosthesis, which leads to an accelerated increase in prosthesis wear. Therefore, the obese patient will have to undergo a new surgical intervention in a shorter time interval than those with an adequate BMI.^{1,3,4}

The rate of obesity among the adult population has increased in epidemic proportions. Statistical data support the hypothesis that obesity rates will continue to grow until 2030.¹⁶ According to the medical literature, the obese and overweight populations, assessed by BMI, are more likely to have conditions such as knee osteoarthritis.^{1-3,14} In the present study, it was observed that the vast majority of patients eligible for TKA are above their ideal weight (82%).

The significant improvement in joint pain and functional limitations after TKA^{14,15} does not change the patients' lifestyle habits.¹⁷⁻²⁰

The results of these studies are alarming, since the number of young patients undergoing knee arthroplasty is gradually increasing.^{13,16} Furthermore, a higher-than-ideal BMI raises concerns regarding the lower durability of the prosthesis.^{13,20}

The present study aimed to investigate the effect of TKA on the BMI of patients undergoing this procedure.

Material and methods

Through a retrospective analysis, the medical records of 100 patients who underwent TKA from August 2011 to July 2013 were analyzed. As this was a retrospective study, the institution did not require approval from the Ethics Committee. The inclusion criteria were: male and female patients with a diagnosis of knee osteoarthritis, BMI greater than or equal to 20,

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