EVALUATION OF PULMONARY FUNCTION TESTS IN OBESE PATIENTS RELATION TO SMOKING: PRELIMINARY REPORT

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OBEZ HASTALARDA SOLUNUM FONKSİYON TESTLERİNİN SİGARA İLE İLİŞKİSİNİN DEĞERLENDİRİLMESİ: ÖN DEĞERLENDİRME SONUÇLARI

ABSTRACT

Aim: The aim of the study was to evaluate expiratory flows in smoker or non-smoker obese patients who underwent elective surgery.

Material & Method: The ages, weight and height, BMI, smoking status, pulmonary function test (FVC, FEV 1, PEF, FEV 25/75, FEV 25, FEV 50, FEV 75, FEV 1/ FVC) values of the morbidly obese patients who admitted to the Anesthesiology polyclinic were recorded.

Results: Of the 16 patients who smoker, BMI: 39.87 ± 5.42 and non-smoker 24 patients had BMI: 40.28 ± 5.17, no statistically significant difference was found between the two groups. When the parameters of the respiratory function tests were evaluated, the values of the patients who were smoker were found to be lower than those who were non-smoker and there was a statistically significant difference.

Conclusion: In our study, tests showed that smokers had lower FEV1/ FVC than non-smokers. In conclusion, in obese patients, smoking adversely affects pulmonary function tests.

Keywords: obese, smoker, respiratory function tests

ÖZET

Amaç: Çalışmanın amacı, elektif cerrahi uygulanan sigara içen ve içmeyen obez hastalarda ekspiratuar akımları değerlendirmektir.

Gereç&Yöntem: Anesteziyoloji polikliniğine başvuran morbid obez hastaların yaş, kilo ve boy, BMI, sigara içme durumu, solunum fonksiyon testi (FVC, FEV 1, PEF, FEV 25/75, FEV 25, FEV 50, FEV 75, FEV 1/ FVC) değerleri kaydedildi.

Bulgular: Sigara içen 16 hastanın BMI: 39,87 ± 5,42 ve sigara içmeyen 24 hastanın BMI: 40,28 ± 5,17 olup iki grup arasında istatistiksel olarak anlamlı fark bulunamadı. Solunum fonksiyon testleri parametreleri değerlendirildiğinde sigara içen hastaların değerleri sigara içmeyenlere göre daha düşük olduğu ve istatistiksel olarak anlamlı fark olduğu görüldü.

Sonuç: Çalışmamızda testler sigara içenlerin FEV1/FVC değerlerinin sigara içmeyenlere göre daha düşük olduğunu gösterdi. Sonuç olarak obez hastalarda sigara kullanımı solunum fonksiyon testlerini olumsuz etkilemektedir.

Anahtar Kelimeler: obez, sigara içicisi, solunum fonksiyon testleri

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Introduction

Spirometry is the most comprehensive screening method for lung functions. Obesity (BMI 30 kg/m2 or greater) could be another risk factor for respiratory function disorders. FVC, FEV1 and FEV1/FVC(Tifno)are the most important indicators in the diagnosis of obstructive and restrictive functional changes. FEV50 and FEV2575 give information about the disorders. FEV1/FVC and FEV2575, and to a lesser extent FEV1, change more significantly as a result of cigarette smoking.

The main objective of this study is to evaluate expiratory flows in smoker or non-smoker obese patients who underwent elective surgery.

Methods

The ages, weight and height, BMI, smoking status, pulmonary function test (FVC, FEV 1, PEF, FEV 25/75, FEV 25, FEV 50, FEV 75, FEV 1/ FVC) values of the morbidly obese patients who admitted to the Anesthesiology polyclinic were recorded. The inclusion criterias of the study were; morbidly obese patients aged > 18 years and BMI > 30.

Results

Total of 40 patients were included in the study. Twenty-three were female and 1 was male of the 24 patients who non-smoker, 6 were female and 10 were male of the 16 patients who smoker.

10 of the smokers used less than 20 packs / year and 6 of them used more than 20 packs / year. The mean age of the 16 smokers was 56.25 years. Of the 16 patients who smoker, BMI: 39.87 ± 5.42 and non-smoker 24 patients had BMI: 40.28 ± 5.17, no statistically significant difference was found between the two groups. When the parameters of the respiratory function tests were evaluated, the values of the patients who were smoker were found to be lower than those who were non-smoker and there was a statistically significant difference (Table 1).

Discussion

One of the most commonly used indicators of respiratory function, FEV1, shows significant decrease with increased duration of smoking. Bottai M. et al. reported that lower values of FVC and FEV1 in the general population were linked to an increased BMI and after a weight reduction the respiratory parameters had improved (1). Another popular indicator in the diagnostic practice is FEV1/FVC. Khalid G. et al. (2) found reverse correlation between FEV1/FVC and pack years. In our study, tests showed that smokers had lower FEV1/FVC than non-smokers. In conclusion, in obese patients, smoking adversely affects pulmonary function tests.

Table 1. Mean %pred of spirometric parameters in groups

	Non-smokers (n:24)	Smokers (n:16)
FVC	88.54*	75.06
FEV 1	91.13*	74.56
PEF	75.75*	65.94
FEV 25/75	85.25*	73.50
FEV 25	77.92*	68.63
FEV 50	79.33*	68.06
FEV 75	77.83*	67.03
FEV 1/ FVC	92.88*	79

**p <0.05, Statistically significant differences in spirometric parameters between groups*

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