Pulmonary dysfunction in obese early adolescents

Abstrak

Tujuan: Prevalensi obesitas pada anak mengalami peningkatan yang berarti di seluruh dunia. Obesitas dapat menyebabkan berbagai komplikasi, termasuk gangguan fungsi paru. Penelitian uji fungsi paru pada anak obes masih terbatas dan menunjukkan hasil yang berbeda-beda. Penelitian ini bertujuan mengetahui proporsi gangguan fungsi paru pada remaja obes dini di Indonesia serta hubungan antara derajat obesitas dan derajat gangguan fungsi paru. Metode: Uji potong lintang dilakukan di Departemen Ilmu Kesehatan Anak FKUI-RSCM pada bulan November 2007 sampai Desember 2008. Subjek adalah remaja berusia 10-12 tahun dengan obesitas. Pada subjek dilakukan uji fungsi paru untuk menilai FEV1/FVC, FEV1, FVC, V50, dan V25. Hasil: Terdapat 110 subjek yang memenuhi kriteria penelitian. Jenis kelamin lelaki sebanyak 83 (75,5%) dan perempuan 27 (24,5%); median IMT 26,7 (22,6-54,7) kg/m2, 92 subjek (83,6%) superobes. Riwayat asma dan rinitis alergi terdapat pada 32 (29,1%) dan 46 (41,8%) subjek. Uji fungsi paru abnormal ditemukan pada 64 (58,2%) subjek, terdiri dari gangguan paru campuran 33 (30%), restriktif 28 (25,5%), dan obstruktif 3 (2,7%). Rerata nilai FEV1, FVC, V50, dan V25 mengalami penurunan, sedang rasio FEV1/FVC dalam batas normal. Tidak terdapat perbedaan bermakna rerata parameter uji fungsi paru pada kelompok superobes dan obes. Tidak ada korelasi antara IMT dengan parameter uji fungsi paru. Tidak terdapat hubungan antara derajat obesitas dengan derajat gangguan fungsi paru. Kesimpulan: Gangguan fungsi paru pada remaja dini obes 58,2%. Kelainan tersering adalah tipe campuran (30%), restriktif (25,5%), dan obstruktif (2,7%). Tidak ada korelasi antara IMT dan parameter uji fungsi paru.
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Abstract
Aim: Obesity leads to various complications, including pulmonary dysfunction. Studies on pulmonary function of obese children are limited and the results are controversial. This study was aimed to determine proportion of pulmonary dysfunction on early adolescents with obesity and to evaluate correlation between obesity degree with pulmonary dysfunction degree. Methods: A cross-sectional study was conducted at the Department of Child Health, Medical School, University of Indonesia, from November 2007 to December 2008. Subjects were 10 to 12 year-old adolescents with obesity. Subjects underwent pulmonary function test (PFT) to assess FEV1/FVC, FEV1, FVC, V50, and V25. Results: 110 subjects fulfilled study criteria, 83 (75.5%) were male and 27 (24.5%) were female with median BMI 26.7 (22.6-54.7) kg/m2; 92 subjects (83.6%) were superobese. History of asthma and allergic rhinitis were found in 32 (29.1%) and 46 (41.8%) subjects, respectively. 64 (58.2%) subjects had abnormal PFT results consisting of restrictive type in 28 (25.5%) subjects, obstructive in 3 (2.7%), and combined type in 33 (30%). Mean FEV1, FVC, V50, and V25 values were below normal, while mean FEV1/FVC ratio was normal. There was no statistically significant correlation between BMI and PFT parameters. No significant correlation was found between degree of obesity and the severity of pulmonary dysfunction. Conclusions: Pulmonary dysfunction occurs in 58.2% obese early adolescents. The most common abnormality was combined type (30%), followed by restrictive (25.5%), and obstructive type (2.7%). There was no correlation between BMI and pulmonary function test

parameters.