Study of serum adiponectin level in obese and non-obese asthmatic patients

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Asthma is associated with airway inflammation and reversible airflowobstruction.Obesity has recently been identified as a major risk factor for thedevelopment of asthma. Obese asthma patients have more severe disease withincreased asthma exacerbations, decreased asthma control, and decreased steroidresponsiveness and is becoming a major public health issue in many countries.Adiponectin is a protein specifically secreted from adipose tissue. It circulatesto influence other organs as the liver, skeletal muscles, and blood vessels. Anauto/paracrine effect on adipose tissue also exists. It has antidiabetic (by promotinginsulin sensitivity), anti-inflammatory and anti-atherogenic effects. Its secretion isinfluenced by different hormones and cytokines. Hypoadiponectinemia is observedin obesity, type 2 diabetes, hypertension, coronary artery disease and bronchialasthma.This work aimed to determine whether serum concentration of adiponectinchange in asthmatic patients during acute attack and in remission and whether thesechanges correlate with the changes in ventillatory functions.This study included 55 cases.40 patients with bronchial asthma (20 obese and20 nonobese) and 15 age related healthy subject as a control (7 obese and 8nonobese).The range of body mass index (k/m2) in obese control subjects was from 31.7to 35.8(k/m2) with the mean body mass index 34 ± 1.4(k/m2).while in nonobesecontrol subjects from 22.6 to 24.9 (k/m2) with the mean body mass index 23.7±1(k/m2). In obese asthmatics the range was from 30.1to 35.8 (k/m2) with theSummary☐☐mean body mass index 32.8±1.6(k/m2) .while in nonobese asthmatics the rangewas from 19.1 to 24.9 (k/m2) with the mean body mass index 22 ± 1.7(k/m2).The range of age in in obese control subjects was from 29 to 39 years with themean age 34.5 ± 4.4 years while in nonobese control subjects from 33 to 50 yearswith the mean age 42.4 ± 7.35 years.In obese asthmatics the range was from 29 to52 years with the mean age 39.5 ± 6.95 years while in nonobese asthmatics therange was from 25 to 51 years with the mean age 35.5 ± 7.2 years.The results also showed the sex distribution among the studied groups.25males included in this study,3 obese control subjects ,4 nonobese control subjects,8 obese asthmatics and10 nonobese asthmatics.30 females included in this study, 4obese control subjects ,4 nonobese control subjects,12 obese asthmatics and 10nonobese asthmatics.In this study, statistical comparison of ventillatory function tests were doneamong all studied groups,The mean value of FVC, FEV1(%pred), FEV1/FVC,FEF25-75(%pred) in obese control subjects was

86,81,94.1,90 respectively whilein nonobese control subjects was 90,85,94.4,94 respectively.In obese asthmaticsthe mean value of FVC, FEV1(%pred), FEV1/FVC, FEF25-75(%pred) duringattack was 65,27,41.5,35 respectively and during remission was83.3,75,90,74,while in nonobese asthmatics the mean value of FVC,FEV1(%pred),FEV1/FVC, FEF25-75 (%pred) during attack was 65.2,30,46,41.2 respectively andduring remission was 78.8,67,85,80 respectively.Serum adiponectin(µg/ml) in obese control subjects (3.25 ± 0.65 µg/ml) washighly -significant lower than that in nonobese control subjects(10.51 ± 1.55µg/ml), (P 0.05) in obese control subjects.Alsothere was significant positive correlation value 0.05) in between serum adiponectin (µg/ml)and FVC (%Pred) ($r = 0.91$, P-value nonobese control subjects.There was nonsignificant positive correlation between the changes in serumadiponectin (µg/ml) and the changes in FVC(%pred) ($r = 0.27$, P-value > 0.05)and highly significant positive correlation with changes in FEV1(%pred) ($r = 0.82$,P-value< 0.001),significant positive correlation with FEV1%($r = 0.56$, P-value 0. 05) and significant positivecorrelation with the changes in FEF25-75 ($r = 0.53$, P-value < 0.05) in nonobeseasthmatics.The results showed significant positive correlation between age (years) andserum adiponectin (µg/ml) in obese ($r = 0.81$, P-value < 0.05) and nonobese controlsubjects ($r = 0.87$, P-value < 0.05).Also there was highly significant positivecorrelation between age (years) and serum adiponectin (µg/ml)in obese asthmaticsduring attack($r = 0.91$, P-value < 0.001) and remission($r = 0.88$, P-value