

Jan. 2010 (Vol. 3, Issue 1)

# CMR@JOURNAL

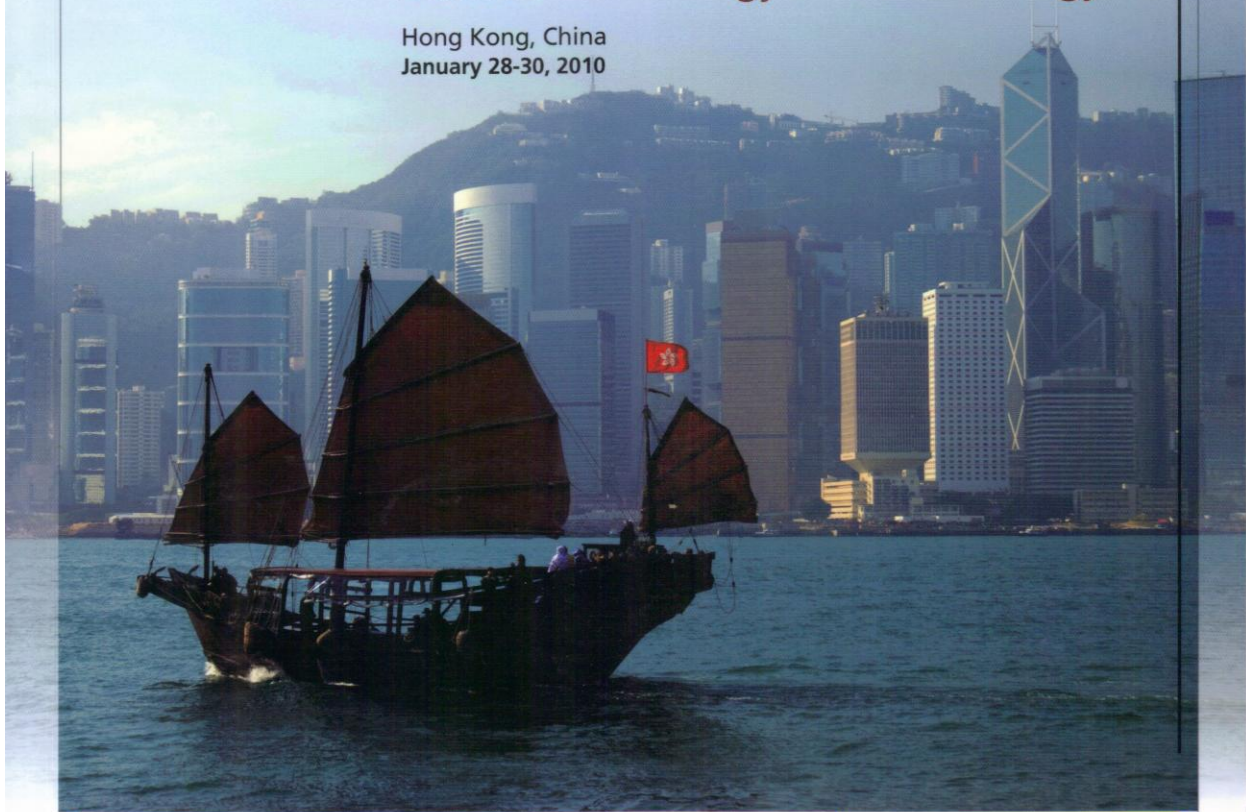
Official Journal of the International Chair on Cardiometabolic Risk



## The 1<sup>st</sup> International Congress on **Abdominal Obesity**

Bridging the Gap  
Between Cardiology and Diabetology

Hong Kong, China  
January 28-30, 2010



International Chair on  
Cardiometabolic Risk



UNIVERSITÉ  
LAVAL



CENTRE DE RECHERCHE  
INSTITUT UNIVERSITAIRE  
DE CARDIOLOGIE  
ET DE PNEUMOLOGIE  
DE QUÉBEC

**Objectives:** Adiponectin, is an adipose tissue-specific adipokine, that circulates in human plasma at high levels, although lower levels are noted with insulin resistance and atherosclerosis. We investigated the associations between plasma adiponectin concentrations and some of the cardiovascular risk factors in patients with T2DM.

**Methods:** Totally 103 patients with T2DM were recruited. Patients were evaluated for laboratory and anthropometric measurements including serum adiponectin, fasting insulin, fasting plasma glucose, oral glucose tolerance test, HbA1c, HOMA-IR, hsCRP, weight, height, BMI and WHR. Data analyses were done using Food Processor II (FPII) and SPSS version 13 software.

**Results:** The mean of log<sub>10</sub>-transformed serum adiponectin concentration was  $0.79 \pm 0.27$  µg/ml. In multivariate linear regression after multiple adjustment, the log of serum adiponectin was independently associated with WHR ( $P=0.02$ ,  $t=-2.33$ ) and markedly but not significantly with age of patients ( $P=0.058$ ,  $t=1.92$ ) and HDL-C ( $P=0.056$ ,  $t=1.93$ ). The univariate linear regression analysis couldn't show any significant relation between the log of serum adiponectin and dietary factors.

**Conclusions:** Our findings showed that WHR, one of the most important cardiovascular risk factors, can modulate independently adiponectin levels of T2DM patients in inverse manner. Also, the age of patients and HDL-C levels have marked positive effect on circulating levels of this adipocytokine. Thus, adiponectin might be a useful biomarker to prevent developing CVD in type 2 diabetes.

#### MIXED SPICES INCREASE SERUM ADIPONECTIN PROTEIN (ADIPOKINE) AND INSULIN IN STZ INDUCED HYPERGLYCEMIA RATS

M.M.A.K. Khattak, I.A. Bakar

*Dietetic and Nutrition Sciences, Kulliyah of Allied Health Sciences, International Islamic University, Kuantan, Malaysia*

Spices are used in food preparations around the world with a view to enhance the flavor/aroma of dietary preparations. Apart from this aspect, spices are also used in herbal medicines practice/treatments. Therefore, spices have been studied extensively in relation to their effectiveness in the prevention/control of certain disease conditions. Numerous studies have shown that spices consumed as a part of food provides best control over diabetes (hyperglycemia). Therefore, this project was designed to study the effect of mixed spices namely cinnamon (*Cinnamomum zeylanicum*), cloves (*Syzygium aromaticum* or *Eugenia caryophyllata*), turmeric (*Curcuma longa*) and bay leaves also known as curry leaf (*Murraya koenigii*) on serum glucose, insulin and adiponectin protein concentration in rats induced hyperglycemia with streptozotocin (STZ). Sprague Dawley rats aged three months were injected with 40 mg/kg body weight with STZ in the abdomen in order to induce hyperglycemia. The rats were acclimatized with diets prior allocation to the doses of mixed spices. After having developed hyperglycemia (developed in four to seven days) the rats were divided into four groups i.e. 0 (control), one, two and three gram per day. The aforementioned spices were ground and mixed in equal ratios and added to stock diet 0, 1, 2 and 3 gram of the mixed spices in the feed to be fed to rats daily. The total duration of feeding was 40 days and followed by 20 days after effect of the spices. From the rats blood was collected on the day 0, 21, 31, 41 from the tail and on the 61<sup>st</sup> day from the heart puncture of the rats. The blood samples were immediately processed for serum separation after each collection and stored for later analysis at -70 C. The serum was analyzed

for adiponectin protein, insulin and glucose. The statistical analysis of the results indicated that serum adiponectin protein, insulin concentrations were significantly ( $P<0.05$ ) higher whereas serum glucose concentration was significantly ( $P<0.05$ ) lower in three gram fed spices compared to control one and two gram spices fed groups. This study indicates that the spices provide control over hyperglycemia through increased adiponectin and insulin in circulating blood.

#### THE ASSOCIATION OF ADIPONECTIN AND IMPAIRED GLUCOSE TOLERANCE IN KOREAN LEAN POPULATION

S.Y. Kim<sup>1</sup>, J.E. Yun<sup>2</sup>, S.J. Lee<sup>1</sup>, E.J. Jee<sup>1</sup>, H.J. Kim<sup>2</sup>, S.H. Jee<sup>2</sup>

<sup>1</sup>Institute for Health Promotion, <sup>2</sup>Graduate School of Public Health, Yonsei University, Seoul, Republic of Korea

**Objective:** The objective of this study was to examine the association between body mass index (BMI), waist circumference (WC), adiponectin and impaired glucose tolerance (IGT) in the Korean lean population without diabetes.

**Methods:** The study sample comprised of 9,618 Korean adults aged 20 years or over (5,744 men and 3,874 women) who had participated in the Korean Metabolic Syndrome Research Initiative and had routine health examinations at health promotion centers from April 2006 through December 2007. As indicators of obesity, BMI and WC were classified into tertile groups and adiponectin level was classified into quartile groups for men and women. Lean Group was defined as the lowest tertile BMI and WC. Odds ratio (OR) and 95% confidence intervals (95% CI) were estimated using logistic regression. Model 1 was adjusted for confounding variables, including BMI and WC, whereas model 2 was additionally adjusted adiponectin in the model 1.

**Results:** The mean age was 45.1 years. Low adiponectin level was only associated with the prevalence of IGT, but neither BMI nor WC was associated with IGT. For men in Lean Group, comparing with the highest quartile of adiponectin, the ORs (95% CI) for IGT were 1.43 (0.91-2.24) in Q3, 1.71 (1.08-2.72) in Q2, and 2.38 (1.48-3.85) in Q1, respectively. For women in Lean Group, comparing with the highest quartile of adiponectin, the ORs (95% CI) for IGT were 5.35 (1.36-21.03) in Q3, 7.08 (1.82-27.59) in Q2, and 7.99 (2.09-30.63) in Q1, respectively.

**Conclusion:** These results suggest that the adiponectin was associated with IGT, but neither BMI nor WC among Lean Groups. Therefore, adiponectin in lean groups may represent a good predictive biomarker to evaluate IGT.

\*This study was supported by a grant of the Seoul R&D Program, Republic of Korea(10526).