



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
بوسني: اِنْدِلَا اِنْبَار اِنْبِيَا بِلْمِسِيَا

IUM Research, Innovation & Invention Exhibition 2010 (IRIIE 2010)

ENHANCING QUALITY RESEARCH &
INNOVATION
for
SOCIETAL
DEVELOPMENT



CULTURAL ACTIVITY CENTRE (CAC), IUM 26 - 27 JANUARY 2010

P-328 Mixed Spices Increase Serum Adiponectin Protein (Adipokine) and Insulin in STZ Induced Hyperglycemic Rats

Muhammad Muzaffar Ali Khan Khattak, I.A. Bakar

*Department of Dietetics and Nutrition Sciences, Kulliyah of Allied Health Sciences
International Islamic University Malaysia*

Spices are used in food 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/treatment. 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 part of food provide 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 40mg/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 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 diets 0, 1, 2 and 3 gram of the mixed spices in the feed to be fed daily. The total duration of the feeding was 40 days, and followed by 20 after effect of the spices. From the rats blood was collected on the day, 0, 21, 31, 41 from the tail and 61st day from 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 glucose, insulin and adiponectin protein concentration. The statistical analysis of the results indicated that serum glucose was significantly ($P<0.05$) reduced whereas the insulin and adiponectin protein concentration was significantly higher ($P<0.05$) in three gram spices compared to 0, 1 and 2 gram fed spices groups. This study indicates that spices provide control over hyperglycemia through increased adiponectin and insulin in circulating blood.

P-329 Islamic Fasting Cause Changes in Anthropometry and Bioelectrical Impedance Analysis (BIA)

Muhammad Muzaffar Ali Khan Khattak, Ibrahim Abu Bakar, Liyana Yeim

*Department of Dietetics and Nutrition Sciences, Kulliyah of Allied Health Sciences
International Islamic University Malaysia*

Muslim observes fasting in the Holy Month of Ramadan as an obligation. Therefore, this study was designed to study the effect of fasting on the anthropometry and body composition in fasting subjects. Twenty five volunteers (male & female) from the International Islamic University Malaysia (IIUM) were recruited in Ramadan. Age, sex, weight, height, waist & hip circumference and menstrual cycle status (in case of females) were recorded on day1 and body weight and waist & hip circumference were also recorded on day 21 of Ramadan. Similarly, bioelectrical impedance analysis (BIA) was performed on day1 and 21 for the assessment of changes in body composition. From body weight & height basal metabolic Index (BMI) was determined. Measurable waist-hip ratio was determined from the waist and hip circumferences. After 21 days of Ramadan fasting body weight was significantly ($P < 0.001$) reduced in the obese individuals. There was significant ($P < 0.01$) reduction in waist hip ratios in obese male and female. In the present study BIA showed no significant change in the intra or extra cellular water, however there has been shift of water between the two compartments which seems to be a physiological phenomenon during fasting. Infact, there was a strong positive correlation ($r = 0.9$) between the fat free mass and total body water and similarly there was a strong negative association ($r = -0.9$) with total body water. This study indicates that Islamic fasting could be a useful tool for the management of body weight without having major shift in the body composition.