

ICCN Poster Presentations

Evidence based nutrition

Effect of high fibre fruit (Guava - *Psidium guajava* L.) on the serum glucose level in induced diabetic mice

R Mohd Yusof* and M Said

Department of Nutrition and Health Sciences, Faculty of Medicine and Health sciences, Universiti Putra Malaysia, 43400, UPM Serdang, Selangor, Malaysia.

Water-soluble dietary fibre was found to decrease postprandial glucose concentrations in type 2 diabetes mellitus subjects. This study was designed to investigate the effect of high fibre fruit (guava - *Psidium guajava* L.) on serum glucose level in induced diabetes mellitus mice. A total of 40 male mice were used in the study and the duration of the study was 5 weeks. Mice were divided into 4 groups (10 mice per group); they were normal control, diabetic control, diabetic with guava treatment and diabetic with glibenclamide treatment. After 2 weeks of stabilization phase, three groups of mice were induced to have diabetes mellitus (except normal control) with streptozotocin. During the 5 weeks study, normal and diabetic control group were given only normal diet (basal diet), diabetic with guava treatment received additional 0.517 g/day of guava, meanwhile for the diabetic with glibenclamide treatment group, they were forcedly given 5 mg/kg of glibenclamide daily. Fasting blood were taken weekly through a cut in the tail and analysed enzymatically. Results showed that there was a reduction in blood glucose level in diabetic with guava treatment group in week 3, 4 and 5 with changes in glucose level of -12.3%, -24.79% and -7.9% respectively as compared with the diabetic control group. Comparisons between the mean of blood glucose level in diabetic with guava treatment group and diabetic with glibenclamide treatment group shows that the mean was significantly different in week 4 ($p=0.029$) with changes in blood glucose level of 25.88%. This study showed that supplementation of 0.517g/day guava could reduce fasting blood glucose level but the mean was not significantly different ($p>0.05$). Guava is a tropical fruit that contain high dietary fibre (soluble and insoluble) and could have health potential in the management of blood glucose level in diabetic subjects. Therefore further studies are needed to investigate the different doses of guava that will give more promising results.

The effect of weekly dose of iron supplementation for 16 and 20 week on the iron status of adolescent girls in Iran

K Samadpour*, R Sheikholeslam, Z Abdollahi and F Mazandrani Salehi

Department of Nutrition, Ministry of Health and Medical Education, Iran

Introduction: Iron deficiency and iron deficiency anemia are among the most important public health problems in the world, with evident adverse effects on physical, behavioral, and work capacity of individuals. Infants and pre-school children, adolescents (especially girls), women of reproductive age and pregnant women are at increased risk. Globally 26% of adolescents in developing countries are anemic. In Iran according to a national survey, in 1992, 30% of people between 3 and 65 years were anemic (based on hemoglobin measurement). Iron supplementation is an important strategy for the prevention and treatment of iron deficiency anemia and can produce substantial improvements in the functional performance of iron deficient individuals and populations and weekly dose of iron supplementation may be an effective means of increasing iron status.

Materials and methods: This clinical trial study was carried out to compare effectiveness of weekly dose of 150 mg of ferrous sulphate for 16 and 20 weeks in adolescents' girls. Hemoglobin, hematocrit, and Serum ferritin concentrations were measured at baseline and after 16 and 20 wk of supplementation. 448 teenager girls were included and data analyzed by using EPI6 software.

Results: Hemoglobin concentrations increased significantly after 16 and 20 wk supplementation. Based on the results, before supplementation mean of hemoglobin and hematocrit was 12.8 (gr/dl) and 38% and after 16 weeks supplementation was 13.9 (gr/dl) and 40.6% and then after 20 weeks was 13.9 (gr/dl) and 40.8% respectively. Mean hemoglobin of girls after 16 weeks supplementation was significantly higher than before supplementation. Mean hemoglobin increased 1.1gr/dl after 16 weeks and 1.2 gr/dl after 20 weeks. The difference between before and after intervention was statistically significant ($P<0.0005$) but the difference between 16 and 20 weeks was not significant.

Conclusion: Because weekly supplementation with iron is effective at improving iron status, this option should be thoroughly explored in the context of programs for the prevention and the treatment of iron deficiency and anemia. But weekly iron supplementation was found to be a practical, effective, and inexpensive method for improving iron status in adolescent school girls.