Poster Presentations

02P–1

Phosphate and Potassium in West Indian Fruits: Why End-stage Renal Disease Patients Should Not Cut Them Out

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Objective: This paper sets out to measure the levels of phosphate (PO_4^{3-}) and potassium (K^+) in local fruits, the two major ions in the human diet that pose problems for end-stage renal disease (ESRD) patients.
Methods: Analyses were done on fifteen popular fruit species which were dry-ashed and appropriately diluted. Quantification of phosphate was done using visible spectroscopy and the molybdate reagent. Potassium was measured by direct aspiration through a flame photometer. Comparisons were made to calibration curves and expressions for milligrams of edible phosphate and potassium per hundred grams of whole fruit were derived. To make recommendations to patients, these two sets of results were merged to express the amount of each fruit safe for ESRD consumption. The Nutritive Renal Index equation was developed to determine if foods are safe to consume in recommended portions, accounting for their phosphate and potassium content.
Results: The local fruits tested showed significant variations in the levels of PO_4^{3-} and K^+, however, there were some local fruits which were much lower in these ions than the temperate fruits which are routinely recommended locally.
Conclusion: A formula for determining a cumulative expression for potassium and phosphate was developed. This showed that carambola (star fruit), pomerac (otaheite apple), portugal (tangerine) and papaya are local fruits which can be safely consumed in normally recommended portions without posing increased risks to ESRD patients.

02P–2

Factors Associated with Medication Non-compliance among Patients with Type 2 Diabetes at the University Hospital of the West Indies

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Objectives: This study aimed to estimate the prevalence of non-compliance among persons with diabetes attending the University Hospital of the West Indies (UHWI) Diabetes Clinic and to identify factors associated with non-compliance.
Methods: We conducted a cross-sectional study with systematic sampling of 145 patients from the UHWI Diabetes Clinic. Participants completed an interviewer-administered questionnaire after which their medical records were reviewed by one of the study physicians. Medication compliance was assessed using the Morisky Medication Adherence Scale (MMAS).
Results: The sample included 105 women and 40 men (mean age 59 years; mean duration of diabetes 12 years). Using the MMAS, 56.6% of the participants exhibited low compliance, with similar proportions for men and women (53.8% and 57.7%, respectively). In bivariate analyses, factors associated with non-compliance included education level, haemoglobin A_{1c}, patient-doctor relationship, complex medication regimens and frequent changes to medication. In multivariable logistic regression models, factors associated with lower levels of non-compliance were tertiary education (OR 0.28, 95%CI: 0.08, 0.94, $p = 0.040$) and good patient-doctor relationship (OR 0.18, 95%CI: 0.03, 0.99, $p = 0.048$). Frequent changes to medication (OR 3.02, 95%CI: 1.06, 8.58, $p = 0.038$) and complex medication regimen (OR 3.57, 95%CI: 0.92, 13.88, $p = 0.066$) were associated with higher levels of non-compliance.
Conclusion: More than half of the patients attending the UHWI Diabetes Clinic report low medication compliance. Higher education and good patient-doctor relationship were associated with better compliance, while frequent change to medication and complex regimens were associated with lower levels of compliance. These factors should be considered when devising treatment plans for patients with diabetes.

02P–3

The Effects of Inositol and Inositol Hexakisphosphate (IP6) Combination on Blood Glucose Concentration and Lipid Metabolism in Type 2 Diabetes Mellitus Sprague-Dawley Rats

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Objective: Type 2 diabetes mellitus (DM) is a global epidemic which significantly contributes to increasing mortality associated with non-communicable diseases worldwide. This research analysed the effects of inositol and inositol hexakisphosphate (IP6) combination on blood glucose concentration and lipid metabolism in Type 2 DM rats.

Methods: Initially, six rats were fed a normal diet, while 24 rats were fed a high-fat diet (HFD). Diabetes was induced in eighteen of the rats fed HFD by streptozotocin administration. They were then separated into three groups: diabetic control, inositol and IP6 treatment group, and glibenclamide treatment group. The control groups were injected with the citrate buffer. For the final four weeks of the experiment, all rats were fed normal diet and given their respective treatment regimes. A total of five groups (six rats per group) were studied. Non-fasting blood glucose levels, body weight and serum lipid profile were assessed during the eight-week study.

Results: The combination of inositol and IP6 significantly lowered blood glucose and serum lipoprotein concentrations while improving body weight gain in diabetic rats. Serum triglyceride and total cholesterol levels were significantly reduced ($p < 0.05$), while serum high density lipoprotein (HDL) levels were slightly increased in rats treated with inositol and IP6 combination.

Conclusion: Inositol and IP6 combination was shown to modulate high blood glucose concentration and dyslipidaemia, which are common pathologies associated with Type 2 DM. Inositol hexakisphosphate and inositol combination may therefore be exploited as a potential agent for the management of Type 2 DM and other associated metabolic disorders.