

Anti-lipidemic and Hematinic Potentials of Moringa Oleifera Leaves: A Clinical Trial on Type 2 Diabetic Subjects in a Rural Nigerian Community

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Abstract : Diabetes has crept into the rural areas of Nigeria, causing devastating effects on its sufferers; most of them could not afford diabetic medications. Moringa oleifera has been used extensively in animal models to demonstrate its antilipidaemic and haematinic qualities; however, there is a scarcity of data on the effect of graded levels of Moringa oleifera leaves on the lipid profile and hematological parameters in human diabetic subjects. The study determined the effect of Moringa oleifera leaves on the lipid profile and hematological parameters of type 2 diabetic subjects in Ukehe, a rural Nigerian community. Twenty-four adult male and female diabetic subjects were purposively selected for the study. These subjects were shared into four groups of six subjects each. The diets used in the study were isocaloric. A control group (diabetics, group 1) was fed diets without Moringa oleifera leaves. Experimental groups 2, 3 and 4 received 20g, 40g and 60g of Moringa oleifera leaves daily, respectively, in addition to the diets. The subjects' lipid profile and hematological parameters were measured prior to the feeding trial and at the end of the feeding trial. The feeding trial lasted for fourteen days. The data obtained were analyzed using the computer program Statistical Product for Service Solution (SPSS) for windows version 21. A Paired-samples t-test was used to compare the means of values collected before and after the feeding trial within the groups and significance was accepted at $p < 0.05$. There was a non-significant ($p > 0.05$) decrease in the mean total cholesterol of the subjects in groups 1, 2 and 3 after the feeding trial. There was a non-significant ($p > 0.05$) decrease in the mean triglyceride levels of the subjects in group 1 after the feeding trial. Groups 1 and 3 subjects had a non-significant ($p > 0.05$) decrease in their mean low-density lipoprotein (LDL) cholesterol after the feeding trial. Groups 1, 2 and 4 had a significant ($p < 0.05$) increase in their mean high-density lipoprotein (HDL) cholesterol after the feeding trial. A significant ($p < 0.05$) decrease in the mean hemoglobin level was observed only in group 4 subjects. Similarly, there was a significant ($p < 0.05$) decrease in the mean packed cell volume of group 4 subjects. It was only in group 4 that a significant ($p < 0.05$) decrease in the mean white blood cells of the subjects was also observed. The changes observed in the parameters assessed were not dose-dependent. Therefore, a similar study of longer duration and more samples is imperative to authenticate these results.

Keywords : anemia, diabetic subjects, lipid profile, moringa oleifera

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