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Efficacy of beta-glucans from barley and maintenance of normal blood LDL-cholesterol concentrations: A case study in Ghana

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A claim on beta-glucans and maintenance of normal blood cholesterol concentrations has already been assessed with a favorable outcome. The main objective of this study was to assess the claim of beta-glucans from barley grain products lowering effect on low-density lipoprotein (LDL) and cholesterol among Ghanaian population. Total cholesterol and LDL-cholesterol are the endpoints measures for this study. Participants with elevated blood LDL-cholesterol concentration (≥ 3.8 mmol/L) were eligible for the intervention phase. The main study parameters were LDL-cholesterol and total cholesterol. Out of total 343 participants recruited, 20.7% (71/343) were diabetic while 8.75% (30/343) were pre-diabetic. Also, 63.64% (217/343) had high total cholesterol levels, 32.46% (111/343) had high levels of LDL and 27.57% (94/343) had high triglyceride. However, only participants with high LDL (111) were selected for the intervention phase. Many (43.59%) of the study participants were within the age range of 31-60 years. During the baseline survey, 16.16% of the participants were diabetic, during the two weeks follow up, 12.12% were diabetic and 7.46% during the four weeks follow up of daily administration of beta-glucans supplement. Also, the proportion of participants with high TCHOL dropped from 95.96% to 78.79% and slightly increased to 83.58% by follow-ups I and II respectively. The proportion of participants with high LDL dropped from a baseline of value of 95.96% to 60.61% and increased to 79.1% by follow-ups I and II respectively. Also, the proportion of participants with desirable HDL dropped from 95.96% at baseline to 71.72% and 37.31% by follow-ups I and II respectively. The proportion of participants with high TG at baseline was 34.34% and this has declined to 34.34% and increased slightly to 32.84% by follow-ups I and II respectively. Beta-glucans has significantly lowered blood cholesterol concentrations among Ghanaians.

Biography

Kennedy Adu-Twum has completed his MBChB program from the Kwame Nkrumah University, Faculty of Medicine, Ghana. He is a Junior Physician Health Staff at the Kumasi South Hospital of the Diagnosis Directorate of the hospital and has served for two years. He has published 13 papers in reputed journals and has been serving as an Editorial Member for many journals.

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