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

Kennedy Adu-Twum

Kwame Nkrumah University of Science and Technology, Ghana

co-authors: **Denis Dekugmen Yar** and **Rose Adjei**
University of Education Winneba, Ghana

A claim on beta-glucans and maintenance of normal blood cholesterol concentrations has already been assessed with a favourable outcome (*AbuMweis et al., 2010, Keogh et al., 2003*). The main objective of this study was to assess the claim of beta-glucan 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 (≥ 3.8mmol/L) were eligible for the intervention phase. The main study parameters were LDL-cholesterol and total cholesterol. Out of a total of 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 2 weeks follow up, 12.12% were diabetic and 7.46% during the 4 weeks follow up of daily administration of beta-glucan 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 MB ChB program at the age of 26 years from the Kwame Nkrumah University, Ghana, Faculty of Medicine. He is a Junior Physician Health Staff at the Kumasi South Hospital of the Diagnosis Directorate of the hospital and has served for 2 years. He has published 13 papers in reputed journals and has been serving as an editorial member for many heaths editorial programs in the country.

kennedy_adutwum@hotmail.com

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