



BIOAVAILABILITY OF A HEME-IRON CONCENTRATE PRODUCT ADDED TO CHOCOLATE BISCUIT FILLING IN ADOLESCENT GIRLS LIVING IN A RURAL AREA OF MEXICO.

ABSTRACT

A heme-iron concentrate product derived from swine hemoglobin was used to enrich the chocolate-flavored filling of biscuits and the bioavailability of this source of heme-iron was assessed in adolescent girls. The placebo control (PC) group consisted of 35 teenagers with the highest baseline hemoglobin concentrations. The supplemented groups were randomized to receive biscuits fortified with iron sulfate (IS, $n = 37$) or heme-iron concentrate (HIC, $n = 40$). Both groups were supplemented with 10.3 mg Fe/d for 7 wk. Blood chemistry and hematology analyses were performed at baseline and at the end of the study. The baseline prevalence of anemia (hemoglobin $<12\text{g/dl}$) in the entire group was 3.9% and by the end of the study it had fallen to 2.3%. The hemoglobin levels in both supplemented groups increased ($P < 0.05$) during the study period from 13.6 and 13.5 g/dl for HIC and IS, respectively, at baseline to 14 g/dl at the end of the study. Serum ferritin concentrations decreased by the end of the study in both the PC and IS groups ($P < 0.05$), but not in the heme group. In conclusion, iron bioavailability from HIC-fortified biscuits was calculated to be 23.7% higher than that observed for IS, as shown by the differences observed in serum ferritin levels during the study. The iron contained in the heme-iron concentrate was well absorbed and tolerated by the adolescents included in the study.

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