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Protection against obesity in sickle cell disease

Sickle cell disease (SCD) causes multimorbidity and early death. Obesity will amplify these complications. The majority of SCD patients in this country are African Americans [1,2], the race that the the US Department of Health and Human Services Office of Minority Health found are at highest risk for developing obesity (49.8%) [3]. We hypothesize that obesity is prevalent among SCD patients. To test our hypothesis, we have carried out a chart survey of the cohort of SCD patients in our institution. Data from 313 SCD patients (97% African Americans, 177 females:136 males) were collected. Median age was 38 years (range 2-88) (89% of female and 87% male were over 18years). Their phenotypes: HbSS (191/313), HbSC (77/313), HbSbthal0 (40/313), and unknown (5/313). Contrary to our hypothesis, the overall prevalence of obesity in SCD patients was low at 8.6% (27/313). The life-time cumulative risk was 20.2%. These patients were next stratified by age and gender. The prevalence of obesity among SCD males over 18 years (n=119) was 3.4% (95% CI: 0.9-8.6) (c.f. 31.2%; 95% CI: 30.4–32.1) (p<0.0001), among SCD females over 18 years (n=158) was 14.6% (95% CI: 9.2-21.8) (c.f. 44.2%; 95% CI: 43.2–45.2) (p<0.0001) and among SCD patients age 6-17 (n=24) was 0% (95% CI: 0–15.4) (c.f. 23.5%; 95% CI: 22.5–24.6) (p<0.018). The lower prevalence of obesity in SCD may be due to intestinal malabsorption from SCD-related intestinal injury [6], SCD intestinal dysbiosis [7] that protects against obesity, or increased energy expenditure from ongoing inflammatory process in SCD.

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