Letter to the Editor

IGF1 and IGFBP3 Polymorphisms and Plasma Levels in Women

To the Editor: D’Aloisio et al. report on IGF1 and IGFBP3 polymorphisms in relation to circulating insulin-like growth factor I (IGF-I) and insulin-like growth factor binding protein-3 (IGFBP-3) plasma levels among African American and Caucasian women (CEBP 2009;18:954–66). In their study, mean IGF-I levels among Caucasian and African American were comparable. This is surprising because the Caucasian women were somewhat older than the African American women and others have shown a decline in IGF-I levels with age (1–3). One Canadian study reported significantly higher IGF-I levels in 78 nulliparous premenopausal black compared with 329 age-matched white women with comparable body mass index (1). D’Aloisio et al. argue that age was unlikely to influence their results because of a narrow 15-year age range. However, another study found 11% higher median IGF-I levels in 26- to 32-year-old compared with 33- to 40-year-old women (P = 0.003; ref. 2). Several nongenetic factors may significantly affect IGF-I and IGFBP-3 levels. Among D’Aloisio et al.’s study population, a significantly higher proportion of African American women were obese and parous compared with Caucasian women. Holmes et al. reported that IGF-I levels decreased with parity (3), but this was not found in women from high-risk breast cancer families (2). Obesity may also influence IGFBP-3 levels (3), and one study reported obesity to affect IGFBP-3 levels in men differently depending on the IGFBP3 A-202C polymorphism (4). These observations indicate gene-environment interactions.

Current oral contraceptive (OC) use has been reported to have significant impact on IGF-I levels in women from different ethnic groups (1, 5). A significant decrease in IGF-I levels was reported in white nulliparous OC users whereas a significant increase was observed in black nulliparous OC users (1). This interaction was explained by polymorphic variants in three genes, and the IGF-I levels seemed to correlate with the relative frequencies of the polymorphisms among these ethnic groups. In D’Aloisio et al.’s study, 9.2% of the Caucasian women and 4.8% of the African American women were current OC users. It would be interesting to see whether the results remain unaffected if current OC users were excluded. IGF-I levels may also fluctuate during the menstrual cycle (5). The authors do not report on cycle day of blood draw.

To further elucidate how genotypes are associated with IGF-I and IGFBP3-3 levels in different ethnic groups, it would be beneficial to adjust or stratify, in the analyses, for nongenetic factors such as age, body mass index, and OC status, which may affect IGF-I and IGFBP-3 levels directly or indirectly through gene-environment interactions.

Disclosure of Potential Conflicts of Interest
No potential conflicts of interest were disclosed.

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References
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