25-HYDROXYVITAMIN D LEVELS BETWEEN SUBFERTILE AND FERTILE WOMEN IN A TROPICAL REGION

Olusola Abodunrin, Babasola Okusanya

OBJECTIVE

Infertility is a global problem with disproportionate burden in resource poor countries. There are strong indications from contemporary studies that vitamin D deficiency plays a role in infertility and treatment outcomes. Vitamin D levels may be assumed to be optimal in women living in tropical regions, consequently, the prevalence of vitamin D deficiency and insufficiency among infertile women is a poorly researched area in Nigeria. The hypothesis tested was that there is no difference in 25-hydroxyvitamin D levels between women with infertility and fertile women.

DESIGN

This was an analytical cross-sectional study.

METHOD

This study was carried out at Lagos University Teaching Hospital in Lagos State, Nigeria, following full ethical approval from the institution's Health Research Ethics Committee. A total of two hundred participants were recruited from the hospital's Gynaecology Out-patient Clinic and Post Natal Clinic at their 6 weeks' postpartum visits. Relevant data were collected from consenting eligible participants and from their case notes using interviewer-administered questionnaires. 25-hydroxyvitamin D assay was performed on collected samples using the ELISA technique. Concentrations of 25-hydroxyvitamin D were classified according to the Endocrine Society Clinical Practice Guideline: serum 25-hydroxyvitamin D level of ≤20ng\ml was classified as deficiency, 21-29ng\ml as insufficiency and ≥30ng\ml as sufficiency. Data analysis was done with the Statistical Package for Social Sciences version 23. P value of <0.05 was considered significant.

RESULTS

One hundred women with infertility and one hundred fertile women who met the inclusion and exclusion criteria were studied. Women with infertility had a significantly lower median serum 25-hydroxyvitamin D concentration compared to fertile women (37.6 ng/mL versus 51.9ng/mL; p=0.001). A significantly higher proportion of women with vitamin D deficiency and insufficiency were infertile, compared to fertile women (20.0% versus 10.0%; p=0.048). However, there was no identifiable association in this study between multiple variables and vitamin D status of participants.

CONCLUSIONS

Vitamin D deficiency and insufficiency was more prevalent amongst women with infertility in this study. Larger studies are needed amongst multicultural groups and regions to improve the power and generalisation of this study, so a recommendation on assaying vitamin D levels in the evaluation and treatment of women with infertility could be made, if indeed it could potentially impact on treatment outcomes.

KEYWORDS

Infertility, Vitamin D Deficiency, 25-Hydroxyvitamin D