

circumference ( $r = 0.25$ ). Cord DHEAS concentrations, but none of the other hormones, were positively correlated with gestational age ( $r = 0.32$ ), birth weight ( $r = 0.34$ ), birth length ( $r = 0.41$ ) and head circumference ( $r = 0.24$ ). In linear regression analyses, maternal estriol and cord DHEAS predicted birth weight after adjustment for gestational age. No other hormones were independently associated with birth weight. Inspection of mean hormone levels by strata of birth weight (<2500, 2500-3499, 3500+), however, revealed nonlinear relations with the lowest birth weight babies having the lowest maternal estriol and cord DHEAS and no consistent pattern in the upper two categories.

**CONCLUSION:** These data show an association between hormone concentrations and birth weight, however, the hormones involved and their patterns of association differ between the fetal and maternal results. In addition, these data are not consistent with the hypothesis that higher estrogen concentrations in high birth weight babies mediate the positive association with breast cancer risk observed in epidemiologic studies.

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#20

**UNDIAGNOSED PROSTATE CANCER IN SOUTHERN NIGERIA: DISEASE RISK AND PREVALENCE**

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**PURPOSE:** In contrast to previous reports of low prostate cancer (Pca) incidence in Sub-Saharan Africa, a Nigerian cancer register reported Pca to be the most prevalent cancer diagnosed in hospitals with a relative incidence of 16.14%. This study investigates the risk of undiagnosed prostate cancer in three communities in southern Nigeria.

**METHODS:** Men 40 years and older in 300 consecutive households in three southern Nigerian communities were screened by serum prostate specific antigen (PSA) and digital rectal examination (DRE) and those with PSA  $\geq 4$ ng./ml. and/or abnormal DRE were referred for biopsy.

**RESULTS:** Of 309 men contacted, 235 (76.0%) consented and presented for the study but 40(17.0%) did not allow blood draw and/or DRE. 158 (70.9%) were farmers and low-income workers, 41 (18.4%) were middle income workers and 24 (10.8%) were professionals and managers. Their ages ranged from 40-110, mean 56.4 years and 210 (89.4%) were married. PSA ranged from 0.1-723.5 ng./ml., 169 (79.3%) had PSA <2.5ng/ml; 21 (9.9%) from 2.5-3.9ng/ml; 9 (4.2%) from 4.00-9.9ng/ml, 11 (5.2%) from 10-50ng/ml and 3 (1.4%) had PSA >50ng./ml. 83 (35.3%) had BPH, 23 (9.8%) with symptoms and two already had transurethral prostatectomy. 89 (37.9%) had either abnormal PSA and/or DRE. The abnormal PSA rate for men 50yrs. and older was 21 (17.5%). Among men 60 years and older abnormal PSA rate for those with normal or abnormal DRE was 6.5% and 33.3% respectively,  $p < 0.005$ . Only 4 (4.5%) presented for biopsy as advised and two of

them had positive histology for prostate cancer. Fear and lack of understanding are the major reasons for refusing prostate biopsy.

**CONCLUSION:** The proportion of men with PSA  $\geq 4$ ng/ml is comparable with that for regions with high incidence of Pca, such as America. There is an urgent need for education about cancer, cancer screening, diagnosis and treatment. Future work to evaluate percent free to total PSA may be useful to target men at higher risk for Pca for biopsy.

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#21-S

**THE ROLE OF MDR-1 GENE POLYMORPHISMS IN THE GENETIC SUSCEPTIBILITY TO CHILDHOOD LEUKEMIA**

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**PURPOSE:** Childhood leukemia is likely a multifaceted disease resulting from a combination of environmental and genetic factors. P-glycoprotein (PGP), encoded by the MDR-1 gene, is a transmembrane protein that serves as an efflux pump for a wide variety of lipophilic compounds and has a physiologic role of protecting cells against the DNA damaging potential of certain xenobiotics. The polymorphism, C3435T, of this gene has been correlated with altered PGP function in the cells of the intestine, placenta, and hematological compartments. Therefore, we question the putative role of MDR-1 polymorphisms as a susceptibility factor of childhood leukemia.

**METHODS:** Buccal cell DNA of 151 pediatric leukemia cases and 193 control children ascertained through the Northern California Childhood Leukemia Study were genotyped for two common MDR-1 gene polymorphisms, C1236T and C3435T. Genotype data was obtained using multiplex polymerase chain reaction and single nucleotide polymorphism analysis that utilizes the single base extension procedure.

**RESULTS:** Overall allele frequencies of C1236T (45%) and C3435T (49%) were comparable to allele frequencies reported in other studies. Children with the C3435T variant allele were not at a significantly increased risk of developing leukemia. The association between C1236T and leukemia was not statistically significant but was suggestive of a dose response effect. A stratified analysis showed no evidence that C1236T and C3435T affect risk of childhood leukemia differently between Hispanic and non-Hispanic White populations. Limiting the population to acute lymphoblastic leukemia yielded similar results.

**CONCLUSION:** Results of this study provide little evidence that MDR-1 gene polymorphisms alone significantly affect risk of childhood leukemia. Further evaluation, in the context of gene-gene and gene-environment interactions, is required before definitive conclusions are made regarding the role of the MDR-1 gene in the susceptibility to childhood leukemia.

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