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Evaluating the expression of known pro-inflammatory and obesity markers in prostate cancer

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In the United States, childhood obesity has been a growing epidemic with, 1/3 of US children considered overweight or obese. The increased number of overweight and obese children can be linked to several factors including nutrition and social economic status. Households that do not have access to healthy, nutritious foods are significantly more likely to be obese earlier in life than other children. Obesity in children can lead to numerous health complications such as diabetes, high blood pressure, chronic inflammation and carcinogenesis. African American minorities are more likely to be diagnosed and die from one of the various forms of cancer. Therefore, eliminating or reducing preventable risk factors such as unhealthy nutrition and childhood obesity could have important implications for reducing clinical manifestations of adult cancer outcomes. In order to understand the implication of inflammation in the participants, we first analyzed the expression of the inflammation biomarker in prostate cancer cells, used as our baseline data. The pro-inflammatory markers and obesity related genes investigated include adiponectin, leptin, SAA1 /2, interleukin 1 and 6. The transcriptional levels of pro-inflammatory genes were measured by quantitative real-time polymerase chain reaction. The results indicated that the expressions of chronic inflammation markers were increased in cancer DNA as compared to normal DNA. Overall reducing childhood obesity and pro-inflammatory diets while increasing physical activity and access to healthy foods are beneficial in the reduction of cancer risk and will serve as preventive measures for early-stage onset of adult cancers.

Biography

Maya Barbour is a senior Biology Major at South Carolina State University from Charleston, South Carolina. She has plans of attending graduate school. She has been actively engaged in research for the past four years. O'Quan Cross is a senior Nutrition Major at South Carolina State University from Greenville, South Carolina. He has plans to pursue a Master degree in Nutrition or Food Science. He has been actively engaged in research for the past four years.

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