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Notable and Newsworthy

Drs. **Jason Abel**, **Sara Best**, **Sarah McAchran**, and **Daniel Williams** served as faculty for this year's American Urological Association's (AUA) Oral Board Review Course.

Dr. Vinaya Bhatia has been appointed Department Block Leader (DBL) for the Surgical & Procedural Care (SPC) Block in the SMPH ForWard Curriculum.

Kristina Penniston, PhD, RD was an invited speaker at the Royal Society of Medicine Urology Section Meeting in London, UK on "Nutritional Prevention of Recurrent Urolithiasis".

UW Urologic Oncology Fellow Tackling Prostate Tumor Disparity

African American men with prostate cancer have earlier onset of disease, present with more advanced stages, and have worse prostate cancer-specific survival than their white counterparts. Over the last decade, Black men suffered a 1.78-fold higher prostate cancer incidence and a 2.2-fold higher prostate cancer mortality than non-Hispanic White men. When considering causative factors for the disparity, there is a complex interplay between genetics of African ancestry and social determinants of health, which may lend to diet and lifestyle risk factors and unequal access to quality health care.

When **Dr. Ashanda Esdaille** first started her research, she found data suggesting that in comparison to Caucasian men, African American men with prostate cancer have more pro-inflammatory tumor microenvironments with differential gene expression in immune and stress responses, chemotaxis pathways, and cytokine signaling. Further, African American men are more likely to consume high fat diets and have stressful life events - processes that perpetuate systemic inflammatory states. “There is an evolving understanding that chronic or recurrent inflammatory processes drive prostate carcinogenesis. Therefore, the role that prostate inflammation plays in prostate cancer development may highlight the impact that social determinants of health or structural inequities have on tumor biology”, she states. One day, Dr. Esdaille hopes to uncover these associations.

During fellowship, Dr. Esdaille realized that the characterization of prostate tumor immune microenvironments in African American men is quite understudied. However, recent data showed that African American men treated with Sipuleucel-T, an autologous cellular immunotherapy, for metastatic castrate resistant disease have longer median overall survival in comparison to Caucasian men; this background suggested that differential responses to therapy may result in part from differences in tumor immunobiology. These findings led Dr. Esdaille to ask several questions:

- Is this differential response to treatment due to differences in immune cell populations within the tumor microenvironment?
- As hormone deprivation therapy changes immune phenotypes to enhance response to immunotherapy for all patients, is there a heightened change in African American men?
- If hormone deprivation therapy can change the immune phenotype, then what about other immunomodulatory drugs?

To tackle these questions, Dr. Esdaille, designed a project, and successfully secured grant funding through the American Urological Association/Urology Care Foundation, entitled: "**RACE** Study: Understanding the impact of **R**acial differences in pharmacologic modulation of the **A**ndrogen deprivation therapy (ADT) response on a systemic level and within prostate **C**ancer micro**E**nvironments". Through this grant, she is comparing the immune microenvironments between African-American and Caucasion patients treated with or without hormone deprivation therapy with the hypothesis that African Americans will have a more favorable immune infiltrate following hormone deprivation therapy and a poor immune infiltrate prior to therapy.

Considering the aggressive nature of prostate cancer in African American men, using murine models, Dr. Esdaille has also been characterizing the immune infiltrates and rates of tumor growth in mice with aggressive disease treated with hormone deprivation and/or Atorvastatin, an anti-cholesterol but also an immunomodulatory agent. Preliminary results have been exciting. She identified that hormone deprivation therapy in combination with Atorvastatin led a greater decrease in tumor volume than hormone therapy alone. Further, in the long term, Atorvastatin and hormone therapy showed a greater predominance of CD8+ T cells, which is significant as increased CD8+ T cell infiltration is important for cancer cell death.

Dr. Esdaille aims to continue the characterization of the immune infiltrates for African American men with prostate cancer with the plan to use findings as the basis for study in biomarker development. Additionally, if she is able to show that routine immunomodulatory drugs such as statins, or anti-inflammatory agents such as Celecoxib, can alter the immune environment and tumor proliferation, with or without hormone deprivation therapy, then it may change the treatment landscape of aggressive prostate cancer.

Overall, Dr. Esdaille's long term goal is to uncover the unique immune infiltrate for African American men, identify the basis for these racial differences (such as differences in systemic inflammation), and demonstrate the ability to pharmacologically modulate tumor microenvironments. In addition to her basic science and translational research, Dr. Esdaille is a Bristol-Myers-Squibb Diversity in Clinical Trials scholar where she focuses her efforts on clinical trial development and on increasing minority enrollment in prostate cancer clinical trials to help reduce the cancer disparity.

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