Oncology Updates

Girl Fight: Knowledge and Attitudes Regarding Human Papilloma Virus and Human Papilloma Virus Vaccine in a Caribbean Population

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Introduction: Human papilloma virus (HPV) vaccine may reduce the incidence of cervical cancer caused by oncogenic HPV serotypes. Public education is integral to ensure adequate vaccine uptake. We explored knowledge and attitudes towards HPV and HPV vaccine in a Caribbean population.

Methods: Participants (n = 403) were recruited from clinics across Grand Bahama. Consenting participants anonymously completed a self-administered, validated questionnaire with 51 questions (Cronbach alpha > 0.7). Following descriptive analysis, analysis of variance (ANOVA) and *t*-test were used to determine the association between total HPV-related knowledge and demographic variables. All data were analysed using Stata v13.

Results: The majority of the sample was 18–35 years (n = 214; 53.1%), black (n = 369; 91.6%), with 301 (76.2%) sexually active and 223 (55.3%) being parents. Total HPV-related knowledge was scored out of eight. Almost one-half of the sample (n = 170; 47.1%) received a score of 0. Mean HPV-related knowledge score was 1.6 (standard deviation: 2.1). Higher HPV-related knowledge was seen in younger (p = 0.02), educated ($p < 0.0001$) and higher household income ($p < 0.0001$) associated with lower HPV-related knowledge scores. Under one-fifth (19.6%) of the population knew that HPV caused cervical cancer. Only 93 (23.9%) participants had heard of the HPV vaccine. The majority of those knowledgeable about the vaccine would recommend it to others (77%); of whom, most (> 80%) thought reassurance on efficacy and safety were still needed.

Conclusion/Implications: This study found low levels of HPV and HPV-vaccine related knowledge in a predominantly black population. Public education is imperative to increase awareness, likely increase HPV-vaccine uptake and thereby reduce cervical cancer incidence.

Human Papilloma Virus-related Cancers: Bridging the Gap from Bench Research to Clinical Practice

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Objective: The prevalence of oropharynx squamous cell carcinoma (OPSCC) continues to rise due to human papilloma virus (HPV). Black OPSCC patients have poor outcome in comparison to White OPSCC patients. Human papilloma virus-positive OPSCC is a prognostic marker for improved survival but this research was conducted primarily in white patients. We examined the prevalence of HPV-positive OPSCC by ethnicity and evaluated the contribution of HPV to the poor survival of patients of African Ancestry.

Methods: Age-adjusted HPV prevalence by ethnic group was calculated for 1914 OPSCC cases from 25 studies. We also tested OPSCC tissues from Black and White patients for HPV and p16 expression (a marker for HPV carcinogenesis). Human papilloma virus-16 testing was performed by polymerase chain reaction (PCR) from DNA extracted from tumour blocks. P16 staining was performed using standard immunohistochemistry.

Results: Among 1914 OPSCC patients, Asians had a significantly different age-adjusted prevalence of HPV16 compared to White or Black patients and there was no significant difference in HPV prevalence between Black and White patients (White, 56.3% (52.3-60.1); Black, 49.7% (37.9-61.6); Asian, 27.5% (22.6-33.0); $p < 0.0001$). Unlike White OPSCC patients who had predominantly HPV-positive/P16- positive cancers, Black OPSCC patients had a higher proportion of patients with HPV-positive/P16- negative cancers (~75%) and survival was poor despite the HPV-positive status.

Conclusions: Human papilloma virus-associated OPSCC is strongly present in Black patients but does not accurately predict improved survival. For Black patients, p16 proves to be a better prognostic marker and should be implemented in clinical management of Black OPSCC patients.

Clinical Outcomes in Non-metastatic Prostate Cancer Treated with Radiotherapy and Hormones

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Objective: To determine survival outcomes for patients diagnosed with prostate cancers and treated during 2004−2016 at Cancer Centre Bahamas.

Methods: Two hundred and seven sequential prostate cancer cases were radiated during 2004−2016 at the Cancer Centre Bahamas, 81% of whom received 1−2 years of neoadjuvant-adjuvant hormones. By D'Amico risk stratification, 9% were low, 36% were intermediate and 55% were high risk cases. Prostate-only radiotherapy (PORT) was given to 59 cases and pelvis followed with Prostate-boost Radiotherapy (PPRT), given to 148 cases. Prostate-only radiotherapy was given to 16/19 low, 42/74 intermediate and 1/114 high risk cases. Statistical analysis included survival analysis using Stata.

Results: Patients mean age was 65 (range 45–77) years at diagnosis. With limited screening in The Bahamas, median prostate specific antigen (PSA) was 17 at diagnosis. For all 207 cases, five-year Kaplan-Meier overall survival was 91% (10 deaths) and five-year overall disease-free experience was 85% (14 events), both with no significant differences by risk groups, radiation volumes and hormone use (all $p > 0.05$). Mean PSAs three years after commencing radiation was 1.0 for PORT and 1.1 for PPRT and were not statistically different ($p > 0.05$).

Conclusion: Results of survival, disease-free experience, PSA responses and PSA nadirs are consistent with those seen in North America. A randomized trial of more intense *vs* North American guidelines (NAG) treatments for low-intermediate risk Caribbean patients seems relevant. Hormone treatments and follow-up will require a collaborative community-academic partnership to assure strong study and data quality.

Prostate Cancer Treatment with Irreversible Electroporation: Efficacy and Safety in 377 Patients over Five Years

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Objective: This retrospective study seeks to validate the potential benefits of irreversible electroporation (IRE) as a novel treatment for prostate cancer.

Methodology: Patients diagnosed with prostate cancer were treated by IRE using the Angiodynamics Inc. NanoKnife®-System with pre and post-treatment magnetic resonance imagings (MRIs). Irreversible electroporation was performed as an outpatient procedure under general anaesthesia, as first line treatment or second line after failed prior cancer treatment with standard therapies. Patients were evaluated approximately: 3, 6, 12, 18, 24 and 36 months post-treatment.

Results: Three hundred and seventy-seven patients were treated consecutively. Mean age was 65 ± 9 years, with mean prostate volume of 32 ± 20 grams. Gleason score distribution was 6, 7, and > 7.31 for 75, 178 and 91 patients, respectively. Irreversible electroporation was primary treatment in 310 and secondary in 67 patients, respectively. One hundred and seventy-four patients had 3D-biopsy in addition to MRI for pre-treatment planning, allowing for 263 and 114 patients for focal and whole gland ablation, respectively. Twenty-four recurred with a maximum follow-up time of 60 months. By MRI and PSA follow-up, tumour ablation occurred in 100% of the patients as previously planned. Complications noted were: mild haematuria (3%), dysuria (7%) cystitis (2) and acute urinary retention was transient in 8% and persistent in 1%; one patient had a recto-urogenital fistula. Continence was fully preserved in all patients.

Loss of potency (longer than 9 months) was reported in only 9% of the cases using the IIEF-5 score.

Conclusion: Treatment of prostate cancer with IRE is efficacious and safe for all stages, with extremely low toxicity for recurrences.

Age Trends of Colon Cancer in Princess Margaret Hospital in the Bahamas: A 10-year Perspective

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Background: Colorectal cancer is the third most common cancer worldwide and the fourth most common cause of cancer-related deaths. Data on the trends of colorectal cancer in The Bahamas are not fully clear. It has been noted that the Bahamian experience with respect to breast cancer is different from neighbouring territories.

Objective: To determine the descriptive clinical epidemiology of colorectal cancer in The Bahamas in comparison to neighbouring territories.

Method: A retrospective chart review was performed at the Cancer Registry at Princess Margaret Hospital in Nassau, The Bahamas, for cases of colorectal cancer over the period January 2005 – December 2014, with data recorded for age and gender. Data were analysed to determine average age, incidence and proportion of patients diagnosed with colorectal cancer by year and gender.

Results: There were a total of 448 cases of colorectal cancer identified over the 10-year period of the study review. Mean age at diagnosis was approximately 62.5 years, approximately 10 years younger than that in the United States of America (USA). The incidence was approximately 12.8 per 100 000 population which is much lower than in the USA but only slightly lower than regional reports. The male-to-female ratio was approximately 0.95:1 and age

trends and proportion of patients diagnosed by age group were similar between genders.
Conclusion: Patients in The Bahamas are diagnosed with colorectal cancer at a younger age than patients in the USA. Reasons for this should be further investigated and consideration given to appropriate screening guidelines and techniques in The Bahamas.

Breast Cancer Trends in The Bahamas: A 16-year Review
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Objective: To determine the average age of breast cancer in The Bahamas and characterize trends in frequency based on age over the study period.
Methods: We performed a retrospective review of all cases submitted to the Princess Margaret Hospital (PMH) cancer registry from 1998–2014. We divided the patients into 10-year age cohorts and determined the frequency of breast cancer in each group. We then examined the yearly trends in breast cancer over the period.
Results: One thousand five-hundred and eleven breast cancer patients were diagnosed between 1998–2014 in the public sector of The Bahamas. The mean age of diagnosis was 54.5 years. The 40-49-year age cohort showed the highest frequency at 26.3%, followed by the 50–59, 60–69 and 30–39-year age groups at 22.4%, 18.5% and 12.8%, respectively. The average age of diagnosis from 1998 to 2014 has experienced an overall and gradual increase. The percentage of patients diagnosed under the age of 50 years is 42% and under the age of 40 years is 15%. The percentage of yearly breast cancer cases made-up by the age groups under 40 years declined in the period 1998–2014, but the 50-59, 60-69 and 70-79-year age groups experienced an overall increase in the per cent of yearly incidence during this period.
Conclusions: The mean age of diagnosis of breast cancer in The Bahamas is 54.5 years and the largest cohort of breast cancer patients diagnosed fall in the 40–49-year age group.

Trends in Gynaecological Malignancies at The Princess Margaret Hospital in The Bahamas: 2000–2014
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Introduction: In Latin America and the Caribbean, gynaecological malignancies pose a significant burden. Cervical cancer alone poses an estimated economic burden of $3.3 billion dollars. According to The Princess Margaret Hospital (PMH) cancer registry data, gynaecological cancers are the third most frequent accounting for approximately 12% of the cases. The aim of this audit was to determine the incidence of the various gynaecologic cancers and to determine area of greatest need.
Methods: The computerized hospital cancer registry data base was searched using the key terms, cancer, malignancy, neoplasia, cervix, vulva, vagina, fallopian tube, ovarian and peritoneal. We extracted data from 2000–2014 with respect to demographics, disease site, incidence stage at diagnosis and mortality rates. Basic statistical trends were reported in terms of absolute numbers, means and annual incidence.
Results: During the period of review, there were 746 cases of gynaecological cancers. Sixty-five per cent were in the 40-69-year age group, 44.6% of cases were due to cervical cancer, endometrial – 28.9 and ovary – 14.2%. The annual incidence for females > 15 years were 17.5, 10.1 and 5.6, respectively. Although there was a slight decrease in cervical cancer rates, it remained the most prevalent cancer. The incidence rate remained relatively stable for the other sites, except for endometrial cancer where a slight increase was noted.
Conclusions: Gynaecological malignancies contribute significantly to the overall cancer burden in The Bahamas with cervical cancer accounting for the majority of cases. Strengthening of cervical cancer prevention programmes needs to continue to be high on the national agenda.