EPID-07. OUTCOME DISPARITIES IN CHILDREN, ADOLESCENTS AND YOUNG ADULTS WITH MEDULLOBLASTOMA: A POPULATION-BASED ANALYSIS

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Medulloblastoma (MB) is the most common high-grade primary pediatric brain tumor. Recent registry-based studies in children with central nervous system (CNS) tumors have demonstrated that survival outcomes differ by race/ethnicity in multivariable analyses, with Hispanic patients having highest hazard of death overall. To investigate this finding in MB patients, we examined survival in children (0-14 years) and adolescent/young adults (15-39 years) with MB from 2007-2016 in the 2018 Surveillance Epidemiology and End Results Program database, using Kaplan Meier analysis, log-rank test and Cox proportional hazard ratios (HR) with 95% confidence intervals (CI). Race and ethnicity were categorized according to the U.S. Census, with Hispanic ethnicity (yes/no) analyzed separately from race (Black, White, Asian, Other). Among 1612 patients, 81% were White, 9% were Black, 8% were Asian or Pacific Islander, and 2% were from "other" or unknown racial groups. 28% of the cohort was of Hispanic ethnicity. Univariate analysis found that Black patients had a significantly higher hazard of death than White patients (HR=1.55, CI: 1.16 – 2.08, p=0.003). In contrast, Hispanic ethnicity was not significantly associated with outcome (HR=0.98, CI: 0.79-1.21, p=0.8). Medicaid or no insurance (vs. private) were each significantly associated with higher risk of death; Medicaid (HR =1.23, CI = 1.01 - 1.51, p=0.041); Uninsured (HR=2.07, CI=1.41-3.02, p=<0.001). Of the treatment modalities analyzed, patients who received neither chemotherapy nor radiation experienced higher hazard of death than patients who received both treatments (HR=3.63, CI 2.78-4.76, p=<0.001). Consistent with observations in other cancers, racial disparities are observed in patients with MB, with Black race conferring increased risk of death. Public insurance was also significantly associated with death, as was not receiving combined-modality therapy. Further work is needed to understand the multilevel factors impacting diagnosis, treatment and outcome among children and AYAs with MB and prospective studies are warranted.

EPID-08. EPIDEMIOLOGY OF CHILDHOOD BRAIN TUMORS IN MOROCCO

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INTRODUCTION: Brain tumors are the most common solid tumors and cause of cancer-related death in children less than 15 years of age. However, little is known about these tumors in Morocco. The aim of this study is to describe the epidemiological features of pediatric brain tumors in Morocco. METHODS: This is a descriptive retrospective study of pediatric brain tumor cases, diagnosed and treated between 1994 and 2015 at Al Azhar Oncology Center in Rabat. Patient's age and sex, habitat area, overall survival and tumor characteristics were evaluated. RESULTS: During the study period, 41 children under the age of 15 years were diagnosed with brain tumors at Al Azhar Oncology Center. Brain tumors were more common among boys than girls, with a male-female ratio of 1.9. The average age of diagnosis was 7.47 ± 3.06 years (range 2-14 years). More than half (51.22%) of the cases were diagnosed in children aged 5-9 years. Regarding the habitat area, nearly two-thirds (62.50%) of children live at least 30 kilometer (km) away from the cancer center. Medulloblastoma was the most common tumor type with 34.15% of cases. Overall, one patient develops a metastasis. Among the cases for whom the outcome was known, five children died during the study period, consisting of three girls and two boys. CONCLUSIONS: Children's brain tumors remain a serious public health problem in Morocco, especially with the limited number of specialized pediatric cancer centers. The travel burden is a significant factor affecting access to appropriate diagnosis and treatment and can impede the provision of high-quality care for cancer patients.

EPID-09. CHARACTERIZING THE EPIDEMIOLOGY OF RADIATION-INDUCED GLIOMAS FOLLOWING CRANIAL RADIOTHERAPY FOR PEDIATRIC CANCERS: A POPULATION-BASED STUDY

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BACKGROUND: Cranial radiotherapy (RT) is used to treat pediatric central nervous system (CNS) cancers and leukemias. RT carries a risk of secondary CNS malignancies, including radiation-induced gliomas, the epidemiology of which is poorly understood. METHODS: This retrospective study using SEER registry data (1975-2016) included two cohorts. Cohort 1 included patients diagnosed with Grade III/IV or ungraded glioma as a second malignancy >/=2 years after receiving beam radiation and/or chemotherapy for a first malignancy diagnosed at ages 0-19 years, either a primary CNS tumor treated with RT (1a, n=77) or leukemia with unknown RT treatment (1b, n=20). Cohort 2 included patients with possible missed RIG who received RT for a primary CNS tumor diagnosed at 0-19 and then died of presumed progressive disease more than 5 years after diagnosis, since previous studies have documented many missed RIGs in this group (n=296). Controls (n=10,687) included all other patients ages 0-19 who received RT for a first CNS tumor or leukemia who did not fit inclusion criteria above. RESULTS: For Cohort 1 (likely/definite RIGs), 0.97% of patients receiving cranial RT went on to develop RIG. 3.39% of patients receiving cranial RT for primary CNS tumors fell in Cohort 2 (possible RIGs). Median latency to RIG diagnosis was 11.1 years; latency was significantly shorter for Cohort 1b (median 10.0, range 5.0-16.1) vs. 1a (12.0, 3.6-34.4, p=0.018). Median OS for Cohort 1 was 9.0 months. Receiving surgery, radiation, or chemotherapy were all associated with a non-statistically significant improvement in OS (p 0.1-0.2). CONCLUSION: Within the limitations of a population-based study, 1-4% of patients undergoing cranial RT for pediatric cancers later develop RIG, which is incurable and can occur anywhere from 3-35 years later. Effective treatment of RIG remains unclear and is thus deserving of increased attention in preclinical and clinical studies.

EPID-10. CREATION, USE, AND EFFECTIVENESS OF A PRIMARY PROVIDER EDUCATION TOOL FOR TIMELY PEDIATRIC CNS TUMOR DIAGNOSIS BASED ON HEADSMART

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BACKGROUND: Patients of minority race and ethnicity and lower socioeconomic status experience poorer survival of pediatric CNS tumors in the US. These disparities arise in part from differences in stage of disease at diagnosis, suggesting they could be mitigated by earlier diagnosis. HeadSmart is a campaign in the UK to increase awareness of pediatric CNS tumor symptoms among primary care practitioners and the public that has led to a significant decrease in time to diagnosis. METHODS: We created a 30-minute workshop, based on HeadSmart, to educate primary care providers on the presentation, common symptoms, work-up, and diagnosis of pediatric CNS tumors. We publicized the workshop throughout Colorado and delivered it via live webinar or online video recording. We collected demographic, specialty, and practice setting data from participants via optional survey. Participants could also take a 10-question, multiple-choice assessment of their knowledge on pediatric CNS tumor symptoms, work-up, and diagnosis before and after the workshop. RESULTS: We have now delivered the workshop to more than 400 providers in Colorado and the US. 39 providers participated in the survey; 19 completed both the pre- and post-workshop assessments. The mean pre-workshop score was 4.5 correct out of 10 (range 0-7); the mean post-workshop score was 5.4 (range 3-7) (unpaired t-test p=0.04). The mean improvement was 1.1 (paired t-test p=0.007). The majority of participants who completed the survey were pediatricians (n=30). Family practice (FP) physicians and pediatric/FP advance practice practitioners also participated. There was no significant difference in improvement for pediatricians vs. other providers. CONCLUSIONS: An educational tool based on the HeadSmart campaign was widely disseminated and is effective at increasing understanding of the timely diagnosis of pediatric CNS tumors among primary providers in Colorado. Further study, refinement, and dissemination have the potential to help mitigate disparities in pediatric CNS tumor outcomes.

ETMR AND OTHER EMBRYONAL TUMORS

ETMR-01. MANAGEMENT OF CNS TUMOR WITH BCOR INTERNAL TANDEM DUPLICATION WITH MULTIMODALITIES THERAPY: SURGERY, INTENSIVE CHEMOTHERAPY, AND RADIATION

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