

Well-Differentiated Hepatocellular Neoplasm of Uncertain Malignant Potential

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Description

Tumors of the Central Nervous System (CNS) are a heterogeneous group of neoplasms with different prevalence in different genders, age groups and various parts of the CNS. This study aimed to investigate the incidence of malignant neoplasm of brain based on Fars population data. This study was cross-sectional, carried out based on Fars population –based Cancer Registry data. Data was collected retrospectively reviewing all malignant neoplasm of brain patients' records during a 5-year period. Age Standardized Incidence Rates (ASR) was calculated based on world population standards. To analyze the ASR time trends by gender, we carried out a chi-square goodness of fit test. Central nervous system (CNS) tumors are a diverse group of benign and malignant tumors arising from the brain parenchyma and its surrounding structures. These tumors are the leading cause of cancer-related mortality in children and also the most common solid tumors that occur in childhood, they account for 20% of all neoplasms. Brain tumors make up about 88% of all CNS tumors. The factor that may cause brain tumors is uncertain. White race, exposure to radiation, certain chemical exposures in the workplace, working in the rubber, petrochemical or metal industries and family history of malignant neoplasm of brain are known to increase the risk of brain and other CNS tumors. Although, CNS tumors account for about 3% of the new cancer diagnoses globally, they can lead to mortality and morbidity that often creates a high burden on both families and health care systems. The incidence of primary CNS tumors has been estimated as 3.9 and 3.2 per 100,000 person-year worldwide in males and females, respectively.⁶ The increase observed in incidence rates of malignant brain and other CNS tumors over the past decades is mainly due to increased access to diagnostic imaging and specialized medical care. In addition, their distribution varies throughout the world, with the highest incidence in Australia, North America and European countries, especially among the white people, and the lowest in Africa. Epidemiological studies in different parts of the world have shown that males have a higher risk of being diagnosed with malignant brain and other CNS tumors than females.¹⁰ It is estimated that about 50,800 new cancer cases occur in Iran each year. Among them more than 53% belong to males. Almost 4% of all deaths due to all cancer cases in both genders in this country are due to malignant brain tumors. Due to the lack of population based research on the epidemiology of

malignant neoplasm of brain in Iran, this study was conducted to evaluate the spatio-temporal pattern of this neoplasm. The comparison of this data with national and global statistics and trends will provide the basis for better planning in different areas of health and development, including evaluating the effectiveness of the regional health care system in Fars province.

Epidemiological Studies in Different Parts of the World

Diffuse large B-cell lymphomas (DLBCL), comprising approximately 30% of all Non-Hodgkin Lymphoma (NHL) cases, are the most common NHL types. DLBCL can be separated into distinct categories with 5-year survival rates ranging from 30% to 80%, based on clinical features, pathology, and gene expression signature. The Overall Survival (OS) of DLBCL has improved significantly since the introduction of rituximab in 2006. But increased survival correlates with late influence, including the progress of a Second Malignant Neoplasm (SMN) and long-term toxicities. Regarding all cancer cases; about 1 in 6 is a subsequent or second tumor. Age, lifestyle behaviors/exposures, genetic factors, and treatment exposures are essential inducers for the second tumor. However, little is known about the risk of SMN in DLBCL, particularly extranodal DLBCL. There is mounting evidence that primary extranodal sites reflect distinct clinicopathological characteristics and prognostic implications, and require specific therapy. Hence, we hypothesized that there might be a difference in the risk of SMN depending on the site of involvement in patients with DLBCL. Because multiple sites are involved in the late stages of DLBCL, the initial site involved cannot be accurately defined. In order to avoid the interaction and confusion of multiple external sites, we only included the patients in stage I/II to focus on assessing the difference in the extranodal site of origin.

Hepatocellular Adenoma (HCA)

In addition, it is unknown whether second cancers alter the disease course of DLBCL once they occur. Due to concerns about the toxicity or competing risks associated with lymphoma and its treatment, such patients may encounter obstacles in receiving appropriate cancer treatment. However, the outcomes of patients with DLBCL who develop SMNs have not been studied. This study was designed to evaluate the risk of SMN in patients

with stage I/II DLBCL characterized by different primary extranodal sites, and comparing OS between patients with and without SMNs by analyzing records in the United States (US) Surveillance, Epidemiology, and End Results (SEER) database. Hepatocellular adenoma (HCA) is a benign well-differentiated hepatocellular neoplasm that can be difficult to distinguish from well-differentiated Hepatocellular Carcinoma (HCC). The term “well-differentiated hepatocellular neoplasm of uncertain malignant potential” has been proposed for neoplasms resembling HCAs, but arising in atypical clinical situations (in females over 50 years old or under 15, in males, with anabolic steroid use, or in some congenital conditions), and/or with atypical pathological features insufficient for an unequivocal diagnosis of HCC. A well-differentiated hepatocellular neoplasm occurring in non-cirrhotic liver, Hepatocellular Adenoma (HCA) is typically considered benign. While Hepatocellular Carcinoma (HCC) is rare in non-cirrhotic liver, uncommon occurrences are well-documented, and well-differentiated HCC can be difficult, or even impossible, to distinguish from HCA. The difference, however, can have a profound impact on how patients are

treated and surveyed. Multiple features have been identified in well-differentiated hepatocellular lesions that seem to indicate a greater possibility of malignancy. The term “well-differentiated hepatocellular neoplasm of uncertain malignant potential” has been proposed for a group of these neoplasms resembling HCAs, but with atypical morphological and/or clinical features that are insufficient for an unequivocal diagnosis of HCC. Diagnostic criteria include focal cytological or architectural atypia, focal reticulin loss, or evidence of β -catenin pathway activation. Tumors arising in males, in females at atypically early or late ages, in patients using anabolic steroids, and in the setting of some congenital conditions also qualify as HUMPs.

This study was undertaken to validate the HUMP criteria on a series of previously resected and characterized well-differentiated hepatocellular neoplasms. A secondary goal was to examine the relationship of the HUMP diagnosis with other features suggesting a higher risk of malignancy not included in the criteria.