negative and generally high grade. Overall, loss of PR expression, elevated Ki-67, and HER2 positivity align with a more aggressive luminal B phenotype and higher Nottingham grade, while luminal A is more hormone-driven, lower proliferative, and lower grade. Immunohistochemical profiling together with Nottingham grading therefore offers complementary prognostic information and helps distinguish lower-risk from higher-risk breast cancers and helps to correctly choose the strategy of drug therapy.

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R. Samyuktha, V. Pratheepkumar

Scientific supervisor: Senior lecturer, Dr. M. S. Zhylinski

Educational Establishment
"Belarusian State Medical University'
Minsk, Republic of Belarus

EARLY DIAGNOSIS AND MANAGEMENT OF ADULT MEDULLOBLASTOMA: CLINICAL RELEVANCE, PROGNOSTIC FACTORS, AND TREATMENT STRATEGIES

Introduction

Medulloblastoma (MBT) is a cancer that affects children primarily, but when it strikes adults, the situation is extremely rare. This rarity of the situation makes the diagnosis and treatment of the cancer more complicated in adults than in children, with the outcomes also being less satisfactory than in the case of the latter group. Therefore, the importance of the situation cannot be overemphasized by highlighting the importance of the factors that affect the outcomes and the treatment of the cancer in adults, as highlighted by the retrospective study from Belarus.

Goal

To determine the importance of the early detection and treatment of medulloblastoma among adults, identify the determinants of survival, and make informed recommendations to promote the best outcomes.

Material and methods of research

The retrospective cohort study recruited 203 adult medulloblastoma cases (ages 18 and older) diagnosed between 1980 and 2019 using data from the Belarusian cancer registry. Inclusion criteria were histologically confirmed cases of MBT with documented presentation, tumor location, histology, treatment, and follow-up.The study analyzed demographic and tumor characteristics, treatment modalities, and survival outcomes. Statistical analysis included the Shapiro-Wilk normality test, Kaplan-Meier survival analysis, Cox regression analysis of prognostic factors, and Spearman correlation analysis of age, treatment modalities, and survival outcomes. Significance was set at $p < 0.05$ using SPSS software.

The results of the research and their discussion

The study established that MBT is more common in two age groups: 20–25 years and 50–55 years. The overall 5-year survival rate was 30.5%. The median survival period was 2.5 years. The study established that early diagnosis is an important factor that influences survival outcome in a positive manner. Patients diagnosed with MBT at a tender age (<50 years) have a median survival period of 178 weeks. This is different from patients diagnosed at an advanced age (>50 years), who have a median survival period of 20 weeks. The study established that patients with residual tumor post-surgery have a significant influence on survival outcome. Extensive craniospinal radiation is positively related with survival outcome. The study established that patients undergoing maximum safe resection and adjuvant radiotherapy and chemotherapy have positive prognosis outcomes.

The study established that MBT has significant prognostic factors that influence survival outcome in a positive manner. Patients with MBT <50 years, tumor resection, and chemo-radiotherapy have positive survival outcomes ($p < 0.01$). However, patients with residual tumors have poor survival outcomes. The focus of the discussion is the emphasis on the early diagnosis of the condition, as well as the neuroimaging of the target population. The nonspecificity of the symptoms makes it necessary to educate primary care physicians and neurologists about the condition. The incorporation of modern techniques of diagnosis, including immunohistochemistry and molecular genetics, is necessary in stratifying the condition as well as the prognosis.

The treatment of the condition is a multidisciplinary approach, including surgical resection of the tumor, which is the initial treatment, followed by radiation and chemotherapy according to the tolerance of the patient. The study has shown that the approach, not the resection, improves the survival rate.

Conclusions

It is of utmost importance to detect adult medulloblastoma at an early stage. Various elements, such as the age of the individual and how effectively the tumor has been treated, play an important role in determining the outcome of adults suffering from medulloblastoma. Hence, it is of prime importance that proper diagnostic procedures and management of the condition help improve the outcome.It is of utmost importance that diagnosis, prognosis, and treatment of medulloblastoma be considered together for better results. Future prospective research has to be conducted for better management and individualization of treatment for these patients.

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