**LITERATURE SURVEY**

**1) The 2016 World Health Organization Classification of Tumors of the Central Nervous System: a summary**

**AUTHORS:**  David N. Louis, Arie Perry, et al.

The 2016 World Health Organization Classification of Tumors of the Central Nervous System is both a conceptual and practical advance over its 2007 predecessor. For the first time, the WHO classification of CNS tumors uses molecular parameters in addition to histology to define many tumor entities, thus formulating a concept for how CNS tumor diagnoses should be structured in the molecular era. As such, the 2016 CNS WHO presents major restructuring of the diffuse gliomas, medulloblastomas and other embryonal tumors, and incorporates new entities that are defined by both histology and molecular features, including glioblastoma, IDH-wildtype and glioblastoma, IDH-mutant; diffuse midline glioma, H3 K27M-mutant; RELA fusion-positive ependymoma; medulloblastoma, WNT-activated and medulloblastoma, SHH-activated; and embryonal tumour with multilayered rosettes, C19MC-altered. The 2016 edition has added newly recognized neoplasms, and has deleted some entities, variants and patterns that no longer have diagnostic and/or biological relevance. Other notable changes include the addition of brain invasion as a criterion for atypical meningioma and the introduction of a soft tissue-type grading system for the now combined entity of solitary fibrous tumor / hemangiopericytoma-a departure from the manner by which other CNS tumors are graded. Overall, it is hoped that the 2016 CNS WHO will facilitate clinical, experimental and epidemiological studies that will lead to improvements in the lives of patients with brain tumors.

**2) Pathways from symptoms to medical care: a descriptive study of symptom development and obstacles to early diagnosis in brain tumour patients**

**AUTHORS:** Pär Salander, A Tommy Bergenheim, Katarina Hamberg, Roger Henriksson

Background: The time between experiencing symptoms and treatment in cancer diseases is a time of insecurity and despair. Brain tumour disease is a severe disease with dramatic manifestations and it is important that this time be kept as short as possible.

Methods: A consecutive sample of 28 patients with malignant gliomas and their spouses were interviewed about symptom development, help-seeking and experiences of medical care. The cumulative development of their symptoms was described and factors acting as obstacles to medical care were identified.

Results: Most spouses witnessed months of global dysfunction preceding the symptom leading to physician consultation. The patient factors 'less alien symptoms', 'personality change' and 'avoidance'; the spouse factors 'spouse's passivity' and 'spouse's successive adaptation'; and the physician factors 'reasonable alternative diagnosis', 'physician's inflexibility' and 'physician's personal values' were identified as obstacles on the pathway to appropriate medical care. The importance of acknowledging the power of the spouse as a provider of substantial information from everyday life facilitating differential diagnosis is stressed.

**3) Brain tumours: incidence, survival, and aetiology**

**AUTHORS:** McKinney PA

The term ‘‘brain tumours’’ refers to a mixed group of neoplasms originating from intracranial tissues and the meninges with degrees of malignancy ranging from benign to aggressive. Each type of tumour has its own biology, treatment, and prognosis and each is likely to be caused by different risk factors. Even ‘‘benign’’ tumours can be lethal due to their site in the brain, their ability to infiltrate locally, and their propensity to transform to malignancy. This makes the classification of brain tumours a difficult science and creates problems in describing the epidemiology of these conditions. Public perception generally fails to distinguish between different tumour subtypes and although treatments and prognosis may vary, the functional neurological consequences are frequently similar. This article will give an overview of the burden of brain tumours in the population, looking at the major subtypes where possible, in addition to giving a summary of current views on possible causes

**4) Impact of brain tumour treatment on quality of life**

**AUTHORS:** Heimans, J., Taphoorn, M

Measurement of Health Related Quality of Life (HRQL) in brain tumour patients is important because brain tumours and brain tumour treatment usually affect physical, cognitive as well as emotional functioning. Measurement of HRQL is important for the understanding of disease burden and for the impact of specific tumour treatment. Quality of Life is a multidimensional concept consisting of physical, psychological and social phenomena. A large number of Quality of Life instruments have been developed. The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) and the MOS Short-Form Health Survey are two frequently used general HRQL instruments. A specific brain tumour scale is the Brain Cancer Module, which is designed to be used in combination with general questionnaires. HRQL measurement and neuropsychological examination were used to investigate the impact of radiotherapy and surgery in low-grade glioma patients and the influence of tumour volume, tumour localization, performance status and age in both low-grade and high-grade glioma patients.

**5) Real-Time Hand Gesture Recognition Using Deep Learning**

**AUTHORS:** Malavika Suresh, et al

With the impetuous advancement of informatics, human knowledge is unable to bridge the boundaries and human computer interaction is paving the way for new eras. Here, a real-time human gesture recognition using an automated technology called Computer Vision is demonstrated. This is a type of noncognitive computer user interface, having the endowment to perceive gestures and execute commands based on that. The design is implemented on a Linux system but can be implemented by installing modules for python on a windows system also. OpenCV and KERAS are the platforms used for the identification. Gesture displayed in the screen is recognized by the vision-based algorithms. Using background removal technique, an assortment of skin color masks was trained by Lenet architecture in KERAS for the recognition. The users have tested and produced over 5000 masks with KERAS to generate 96% more accurate results.