

Taxonomy of CNS Tumours;

A Series of Three Short Reviews on the WHO 2016 Classification and Beyond.

Editorial

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Word count: 441

Figures: 0

Tables: 0

Conflict of Interest: The authors have no conflicts of interest to disclose.

For publication in Neuropathology and Applied Neurobiology.

In May 2016, an update of the 4th edition of the World Health Organization (WHO) Classification of Tumours of the Central Nervous System (CNS) was officially released [1]. This revised 4th edition represents a paradigm shift as, for the first time, the definition of multiple CNS tumour entities is now partly based on particular genotypic characteristics. Additionally, compared to the 4th edition (published in 2007), some splitting and lumping of entities occurred because of new insights in the genetic underpinnings of CNS tumours and/or based on more recently published clinico-pathologic studies. As the WHO Classification of CNS tumours is the worldwide accepted standard for the diagnosis of these neoplasms and serves as an important guide for the design of studies monitoring response to therapy and clinical outcome, changes in the classification have important consequences.

Right after the *WHO 2016 Classification* was released, an authoritative review of the most salient changes was published in *Acta Neuropathologica* [2]. Subsequently, several other reviews discussed changes in the revised classification, some of these aiming for a readership of particular disciplines such as paediatric neuroradiologists [3]. The present series of short reviews in *Neuropathology and Applied Neurobiology* not only gives a concise overview of what has changed in the *WHO 2016 Classification* that was published over a year ago, but also a) provides schematic representations of what the classification of gliomas (including mixed neuronal-glial neoplasms) and embryonal tumours looks like right now, b) presents tables summarizing the most relevant molecular markers for the diagnosis of CNS tumours as well as tools that can be used to assess these markers, and c) discusses some diagnostic challenges and new perspectives.

Because the most substantial changes were made in the classification of gliomas and of embryonal tumours, these groups are addressed in two separate reviews [4,5]. The changes regarding the remaining CNS tumours, as well as some more recent developments in the pathological diagnosis of these 'miscellaneous' tumours are summarized in a third review [6].

As can be expected, after publication of the WHO 2016 Classification, further elucidation of the molecular underpinnings of CNS tumours continues at a rapid pace; see for examples of important publications regarding gliomas, medulloblastomas and meningiomas [7-9]. Of note, a consortium has now been established to determine how the most important, clinically relevant new information can be rapidly and practically incorporated into CNS tumour classification [10]. It is hoped that this series of short reviews will help the readers to appreciate the enormous progress that has been made with (WHO) classification of CNS tumours and to get a better idea of the opportunities and challenges that the near future will bring in this respect.

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