neuropathology practice and the access of different centres to these tests, we designed a survey that was sent to all members of the Canadian Association of Neuropathology member list in the fall of 2017. This survey asked a number of questions relating to the approach to glioma diagnosis, immunohistochemical/molecular test ordering patterns, in-house test availability, and need to send out for testing. In this presentation we will present preliminary results from this survey, with a focus on institutional testing capabilities. This provides a valuable resource that could ultimately need to a national database of immunohistochemical and molecular test availability for each neuropathology centre.

### LEARNING OBJECTIVES

This presentation will enable the learner to:

1. Review the key molecular markers in the diagnosis of adult gliomas and methods of testing for them
2. Discuss the effect that the 2016 WHO CNS tumor update has had on clinical practice in Canada

## Abstract 14

### Role of MacroH2A2 in the glioblastoma stem cell epigenome

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Glioblastoma is the most common primary malignant brain tumour in adults, and remains uniformly lethal. These tumours contain a subpopulation of glioblastoma stem cells (GSCs) that drive tumour recurrence and drug resistance. We find that MacroH2A2 is a histone variant that can stratify glioblastoma patients, with higher levels of this histone variant associated with better patient prognosis. Knockdown of macroH2A2 in GSCs is associated with increased self-renewal and an increased expression of stemness genes by RNA-seq. Our preliminary results suggest that macroH2A2 is a novel biomarker for glioblastoma and that macroH2A2 loss is a marker of GSC stemness and a poor prognostic marker in glioblastoma. This work identifies loss of macroH2A2 as a feature of GSCs and provides a framework for therapeutic modulation of this histone variant.

### LEARNING OBJECTIVES

This presentation will enable the learner to:

1. Explain the role of epigenetics in glioblastoma pathophysiology

## Abstract 15

### Cerebellar glioblastoma: a clinicopathologic series of 16 cases

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Due to their rareness, it is not known if the clinicopathological features of cerebellar glioblastomas (cGBMs) are different from supratentorial GBMs (sGBMs). We reviewed all 16 cases of cGBMs (total GBMs: 1350) at St. Michael's Hospital over 18 years and assessed their clinicopathologic features. The mean age at diagnosis was 57 years. The most common presentations were headache (56%) and gait instability (56%). The majority (81%) of cGBMs were hemispheric while 19% involved the midline. There was radiologic evidence of brainstem infiltration at presentation in one case. Radiologically, peritumoral edema (63%) and heterogeneous contrast enhancement (50%) were common. Histologically, cGBM showed leptomeningeal involvement in 10/12 of cases. Uncommon histologic variants included 3 giant cell GBMs, a gliosarcoma, and a tumor with Rosenthal fibres and eosinophilic granular bodies. IDH1 R132H mutation was detected in 3/14 cases, a rate much higher than sGBMs. Additionally, 7/11 tumors had widespread p53 immunopositivity suggestive of TP53 mutation which is in accordance with previous reports in the literature. Of 9 cases tested, none had histone H3 K27M or G34R/V mutation. In summary, cGBMs have unique features that distinguishes them from sGBMs.

### LEARNING OBJECTIVES

This presentation will enable the learner to:

1. Identify the clinicopathological features of cerebellar GBMs including major molecular alterations
2. Compare cerebellar and supratentorial GBMs and describe the distinguishing features of each type of tumor

## Session 4: Infectious/Immune mediated Neuropathology and Neuromuscular Neuropathology

## Abstract 16

### Mycobacterium chimaera encephalitis following cardiac surgery in three adult immunocompetent patients: first detailed neuropathological report.

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