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Proliferative index in astrocytic tumours.

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The accurate grading of astrocytic tumours is of prime importance because it is critical to the patient management and survival/outcome. Although internationally accepted WHO grading system of CNS tumours is based on histological features of H&E stained sections, yet there are cases where differentiation between grade II and grade III is difficult particularly when the biopsy is small. Proliferative index derived from MIB-1 immunostaining has been found to be useful in the distinction between various grades of malignancy. Formalin-fixed paraffin-embedded surgical specimens from 90 cases of astrocytic tumours, 30 each of low-grade astrocytoma (grade II), anaplastic astrocytoma (grade III), and glioblastoma multiforme (grade IV), were immunostained by standard indirect immunoperoxidase technique using MIB-1 monoclonal antibody. MIB-1 labeling index (MIB-1 LI) was calculated. The mean MIB-1 LI values of astrocytomas, anaplastic astrocytomas and glioblastomas were 1.75 +/- 1.5%, 8.74 +/- 6.2%, and 20.54 +/- 12.2% respectively and there was statistically significant difference between grade II and III (Unpaired "t" test, T value 5.907, p value < 0.001) and grade III and grade IV (T value 4.734, p value < 0.001). The statistical analysis also revealed that the mean MIB-1 LI increased with histological grade of malignancy (One way ANOVA test, p value < 0.001). This investigation further reinforces and corroborates the findings that MIB-1 LI is useful tool in assigning grading to the astrocytic tumours and hence in treatment modalities and should be used routinely.

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