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ion of proro-oncogenes.
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arly gene alterations iden-
in astrocytomas include
4ARF, RB1 and PTEN, as
proto-oncogenes, such as
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ABSTRACT N° 33

RELATIONSHIP BETWEEN APOPTOSIS AND CASPASE 3 EXPRESSION IN MALIGNANT GLIOMAS.

Schiffer D, Fiano V, Ghimenti C, Cavalla P

Dept. Neuroscience. University ot Turin

Caspase-3 represents the last step in the pathways to apoptosis. Once activated, it cleaves the inhibitory caspase-activated DNase (ICAD) with activation of CAD and subsequent fragmentation of DNA. The activation of caspase-3 is achieved through both transcriptional and receptorial apoptotic pathways. In many systemic tumors, caspase-3 expression correlates with apoptotic nuclei and also with survival. Caspase-3 has been studied in a series of formalin fixed surgical specimens of 30 gliomas (20 glioblastomas and 10 astrocytomas) by "cleaved caspase-3" (D175) polyclonal antibody (Cell Signaling) and compared with apoptotic nuclei demonstrated by TUNEL technique and morphology. There is a correlation of caspase-3 positive nuclei with apoptotic nuclei, more evident in proliferative areas and less in perinecrotic pseudo-palisadings. Usually the staining is nuclear, but it can be also cytoplasmic or in both cell compartmens. This observation is important for the interpretation of hte mechanism of caspase-3 cleaving in the cell. This staining, toegether with the incomplete overlapping of positive nuclei with apoptotic nuclei in perinectrotic pseudo-palisadings suggest caution when using caspase-3 in order to improve the recognition of apoptotic nuclei in tissue sections.