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### **CD8+ T-cell infiltrate in newly diagnosed glioblastoma is associated with long-term survival.**

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#### **Abstract**

A growing body of evidence supports the significant interplay between the immune system and glioma pathogenesis. Here we investigate whether the extent of local glioma-associated CD8+ T-cell infiltrate at initial presentation correlates with long-term survival in patients with glioblastoma multiforme (GBM). The study was conducted by the University of California San Francisco Brain Tumor Research Center as part of the San Francisco Bay Area Adult Glioma Study, which included over 519 patients with GBM. A central neuropathology review was performed and populations of infiltrating CD8+ T-cells were quantified histologically. Of 108 patients studied, 43 patients had poor survival (<95days) and 65 patients had extended long-term survival of >403days. Tumors from long-term survivors were more likely than short-term survivors to have intermediate or extensive T-cell infiltrates compared to focal or rare infiltrates, and this association appears to be most significant in Caucasian women ( $p < 0.006$ ). Thus, CD8+ T-cell infiltrate is associated with prolonged survival. Our data provide the impetus for more sophisticated studies to further elucidate prospectively the specific T-cell subtypes associated with long-term survival.

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