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Adding high dose celecoxib to increase effectiveness of standard glioblastoma chemoirradiation

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Abstract

Over one hundred clinical trials since 2005 have failed to significantly improve the prognosis of glioblastoma. Since 2005 the standard of care has been maximal resection followed by 60 Gy irradiation over six weeks with daily temozolomide. With this a median survival of 2 years can be expected. This short paper reviewed how the pharmacodynamic attributes of an EMA/FDA approved, cheap, generic drug to treat pain, celecoxib, intersect with pathophysiological elements driving glioblastoma growth such that growth drive inhibition can be expected from celecoxib. The two main attributes of celecoxib are carbonic anhydrase inhibition and cyclooxygenase-2 inhibition. Both attributes individually have been in active study as adjuncts during current cancer treatment, including that of glioblastoma. That research is briefly reviewed here. This paper concludes from the collected data, that starting celecoxib, 600 to 800 mg twice daily before surgery and continuing it through the chemoirradiation phase of treatment would be a low-risk intervention with sound rationale.

Keywords: CUSP9; anhydrase carbonique; carbonic anhydrase; celecoxib; cyclooxygenase; cyclooxygénase; célécoxib; glioblastoma; glioblastome; hypoxia; hypoxie.