Prognostic Impact of Hemoglobin Level and Other Factors on Outcome of Elderly Egyptian patients with glioblastoma multiforme

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Background:

Overall survival in Glioblastoma multiforme (GBM) is usually less than 12 months and long-term survival is rare . The incidence is increasing among elderly patients. In Egypt, CNS tumors ranked as the 4th most common following liver ,breast and bladder cancers. The importance of prognostic factors has grown because they could guide the treatment decision, especially for elderly patients. This retrospective study aimed to assess the impact of serum hemoglobin level among other factors on the survival of elderly GBM patients treated with radiotherapy.

Patients and Methods:

The medical records of 118 elderly GBM patients (≥60) years treated in NEMROCK center from January 2010 to July 2016 were reviewed for the patient's characteristics ,treatments modalities, , serum hemoglobin level before radiotherapy and survival rate. Performance status as measured according to the ECOG score. Complete Surgical resection (defined as resection of more than 98% of the tumor), subtotal resection (defined as resection of more than 50% of the tumor but less than complete resection) and finally biopsy alone .The size of the preoperative and postoperative tumor was defined based on the imaging findings by computed tomography (CT) scan and/or magnetic resonance imaging (MRI) were performed for all patients.

R E S U L T S:

The median age at diagnosis was 63 years (range 60- 75) .Baseline hemoglobin level > 12 g/dl was recorded in 62(52.5%) patients. After a median follow-up of 6.5 months (range 2–18), the 6 ,12 and 18- month survival rates were 66% ,12% and 5% respectively. On univariate analysis, young age of patients (P < 0.001), good performance status score (P= 0.001), male patients(P= 0.035), cytoreductive surgery(p < 0.002), adjuvant chemotherapy (TMZ or CCNU; P=0.001)and pre radiotherapy Hb level >12g/dl(P=0.001) have a significant impact on OS. However, by multivariate analysis, , biopsy alone (P= .031) , pre-radiotherapy hemoglobin level <12g/dl (P= .013), not receiving adjuvant chemotherapy (P=.001), and age >65 years (P= 0.005) were independent predictors of reduced overall survival.

Conclusions

The current retrospective study demonstrated statistically significant a negative impact of elderly age and pre-radiotherapy low hemoglobin level on outcomes of GBM elderly patients. Therefore, we recommend that this group of patients should be treated similar to young patients. The decisions of the treatment regimen should be based on the patient's performance rather than the chronological age alone.