

Association Between The Neutrophil-Lymphocyte Ratio And Survival In Patients With Glioblastoma - The Impact Of Gender- Dependent Prognosis

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Purpose

The Neutrophil-Lymphocyte Ratio (NLR) has been identified as a prognosis predictor in glioblastoma, with ratios higher than 7 associated to worse prognosis. However, these data haven't been linked to gender. Our goal was to assess if NLR maintains the prognosis impact regardless of gender in patients with glioblastoma.

Materials and Methods

A cohort of patients with glioblastoma and surgical resection was analysed retrospectively between 2005 and 2013. Pre and post-NLR were assessed before the beginning of chemotherapy. Gender-basis analysis on global survival (GS), progression-free survival (PFS) and NLR correlation was performed.

Results

The cohort included 98 men and 42 women. Both groups had similar ages (men 62.1±10.00, women 64.9±9.84 years old, p=0.122). GS was 16 (14.25) months and 16 (16.75) months (p=0.719), PFS was 6.5 (10.25) months and 7 (10.75) months (p=0.649) in men and women, respectively. Men have presented NLR values higher than women's before surgery (10.0±6.76 vs. 6.6±5.04, p=0.003). The multivariate analysis with Cox regression has shown an association between pre-surgery NLR and GS with gender control [HR 1.15 (SD 95% 1.06-1.24), p=0.02]. The analysis of survival curves has shown that women with an NLR>7 pre-surgery have presented a lower GS (10, IC 0.0-20.0 months) when compared to an NLR≤7 (19, IC 12.5-25.5 months). In men, the study hasn't shown significant differences in survival curves considering different NLR values.

Conclusion

The effect of the association between pre-surgery NLR and GS is significantly different between genders. A pre-surgery NLR might be a good survival indicator in women.