

## Association Between RDW And Survival In Patients With Glioblastoma

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### Purpose

Several haematological markers have been studied as prognostic determinants in patients with neoplasia. Recently, the Red Cell Distribution Width (RDW) was described as a possible indicator, although its study is still scarce in patients with glioblastoma. Our purpose was to assess RDW as a prognostic factor of survival in glioblastoma patients.

### Materials and Methods

A cohort of patients with glioblastoma submitted to surgical resection was analysed retrospectively between 2005 and 2013. Pre and post-surgery RDW were registered before the beginning of chemotherapy. The association with progression-free survival (PFS) and global survival (GS) was made through the analysis of Cox survival and regression curves.

### Results

140 patients were assessed, 98 men and 42 women, with average ages of  $62.9 \pm 10.00$  years old, GS of  $19.4 \pm 14.34$  and PFS of  $9.4 \pm 8.73$  months. The average pre-surgery RDW was  $13.0 \pm 0.72\%$  and post-surgery RDW was  $14.1 \pm 1.33\%$ . The study has shown that patients with pre-surgery RDW  $>14.5\%$  had a lower GS (7, CI 0.0-15.8 months) when compared to RDW  $\leq 14.5\%$  (16, CI 14.8-17.2 months). Patients with post-surgery RDW  $>15\%$  have presented a lower PFS (5, CI 3.6-6.4 months) compared to RDW  $\leq 15\%$  (8, CI 5.9-10.1 months). The univariate analysis has shown that the pre-surgery RDW is associated to a GS [HR 6.070 (CI 2.122-17.361),  $p=0.001$ ] and a PFS [HR 3.242 (CI 1.165-9.026),  $p=0.024$ ]; also, the association with the GS remains in the multivariate analysis when adjusted to confounding variables [HR 5.679 (CI 1.910-16.886),  $p=0.002$ ].

### Conclusion

Results support the pre-surgery RDW as an independent prognostic factor for GS in patients with glioblastoma.