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B BLOOD GROUP IS A POTENT RISK FACTOR FOR VENOUS THROMBOEMBOLISM IN PATIENTS WITH GLIOBLASTOMA

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Patients with cancer have an increased risk of thromboembolism, which is the second leading cause of mortality in these patients. This risk is assumed to vary according to cancer type, stage of disease, and treatment modality. The risk of venous thromboembolism (VTE) is particularly high in patients with glioblastoma multiforme (GBM). Several mechanisms of the prothrombotic state in patients with cancer have been studied. However, the factors underlying cancer-associated thrombosis in GBM remain undefined. The aim of this study was to investigate genetic and non-genetic potential risk factors that could be associated with VTE in patients with GBM. A cohort of 139 patients treated with concomitant radiotherapy and temozolomide were included in the study. Next generation sequencing and genotyping approaches were applied to assess genetic risk factors in the hemostatic system. Clinical data including surgery, reoperation as well as blood group and patient information such as age and gender were available from patient records. Logistic regression analysis was performed to assess VTE risk. A number of 47 patients (34%) developed VTE during their disease. When genetic and non-genetic potential risk factors were evaluated, only B blood group was found to be significantly associated with VTE incidence (odds ratio [OR]=6.91; confidence interval [CI]=2.19–24.14; P=0.001). Frontal lobe tumour location was more likely to be associated with VTE compared with other brain sites (OR = 3.14; CI = 1.1–10.7; P=0.05). No association was observed between VTE, and the other patient characteristics analyzed. In conclusion, these findings suggest for the first time that B blood group is predictive for VTE incidence among patients with glioblastoma, information that may be potentially valuable when selecting patients with GBM who are at risk for VTE for anticoagulant prophylaxis.