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Letter to the Editor

Radiotherapy is a critical component in the treatment of patients with glioblastoma multiforme (GBM). However, it can result in significant acute and late toxicities [1; 2; 3; 4].

Whereas most of the majority of literature focuses on significant late toxicities such as neurocognitive decline following chemo-radiation [5; 6; 7], there is little emphasis on the implications of acute toxicities and if tumour location influences the side effect profile. It also remains unclear whether changes in radiotherapy delivery technique have any impact on radiotherapy-induced toxicities. Importantly, the information that is given to patients regarding acute toxicity has not been evaluated in the context of modern, highly conformal treatment.

To evaluate this at our institute, a retrospective analysis was carried out in 57 brain tumour patients who were prescribed a dose of 60Gy delivered using VMAT, treated between 2018 and 2019. Data were extracted from electronic clinical databases. Clinical characteristics and dosimetric information were recorded. Tumours were categorised based on anatomical location within the brain (frontal, temporal, parietal, occipital lobes).

Based on clinical letters and annotations, toxicities were recorded by type and whether these were present at baseline (i.e. post-surgery/ biopsy and prior to radiotherapy), during radiotherapy and after radiotherapy.

During radiotherapy, patients who had temporal lobe tumours experienced fatigue more frequently compared to those with tumours in other locations, with one third of patients with

tumours in the temporal lobe experiencing this compared to 0% and 5% of patients with frontal and parietal tumours, respectively (p=0.004). Similarly, patients with temporal lobe tumours more frequently experienced reduced appetite (18.5% of patients with temporal lobe compared to 0% of patients with frontal or parietal tumours p=0.015).

The retrospective nature of this analysis, potentially incomplete toxicity documentation and small cohort size are clear limitations. However, our data suggest that tumour site may have an important influence on acute toxicity and individualised side effects, and, therefore deserves further investigation.

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