Summary

Predicting of the Period of Recurrent for a Post-Operative Glioblastoma after Radiochemotherapy Using $^{201}$TlCl SPECT


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After radiochemotherapy for a post-operative glioblastoma multiforme (GB), the majority of patients return at a later date with a recurrent. To assess whether $^{201}$TlCl uptake can be used as a prognostic indicator in patients with GB, we measured the ratio of $^{201}$TlCl uptake in tumor to $^{201}$TlCl uptake in normal brain (TL index) in 10 patients at the end of radiochemotherapy and followed all the patients until they returned with a recurrent. The TL indices at the end of radiochemotherapy indicated 1.36 to 6.82 (mean ± SD: 3.59 ± 1.84), and the terms of tumor recurrent were 3–12 months (5.55 ± 3.10 month). There was a significant negative correlation between the TL indices and the terms of tumor recurrent ($y = -1.28x + 10.14$, r = 0.760, p < 0.01). Especially, three cases indicated less than 2.0 did not returned with a recurrent in 8 months and 7 cases more than 2.0 returned with a recurrent in 5 months. This study resulted that $^{201}$TlCl SPECT was clinically useful to predict the period of recurrent for GB.

Key words: Glioblastoma, Radiation, Tumor recurrence, $^{201}$TlCl, SPECT.