ABSTRACT

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Timing of radiotherapy in glioblastoma based on IMRT and STUPP chemo-radiation: may be no need to rush.

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OBJECTIVE: To investigate the effect of surgery to radiotherapy interval (SRI) on the prognosis of patients with isocitrate dehydrogenase (IDH) wild-type glioblastoma.

METHODS: Retrospective analysis of the relationship between SRI and prognosis of patients with IDH wild-type glioblastoma who received postoperative intensity modulated radiotherapy (IMRT) in our center from July 2013 to July 2019. The patients were divided into SRI ≤ 42 days (regular group) and SRI > 42 days (delay group). Kaplan-Meier univariate analysis and Cox proportional hazard model were used to analyze whether SRI was an independent factor influencing the prognosis.

RESULTS: A total of 102 IDH wild-type glioblastoma were enrolled. Median follow-up was 35.9 months. The 1-, 2- and 3-year OS of "regular group" were 69.5%, 34.8%, 19.1%, and "delay group" were 69.8%, 26.1% and 13.4% respectively. Multivariate analysis showed that extent of resection (p = 0.041) was an independent prognostic factor for OS. SRI (p = 0.347), gender (p = 0.159), age (p = 0. 921), maximum diameter (p = 0.637) MGMT promoter methylation status (P = 0.630) and ki-67 expression (P = 0.974) had no effect on OS. Univariate analysis (p = 0.483) and multivariate analysis (p = 0.373) also showed that SRI had no effect on OS in glioblastoma who received gross total resection.

CONCLUSION: Appropriate extension in SRI has no negative effect on the OS of IDH wild-type glioblastoma. It is suggested that radiotherapy should be started after a good recovery from surgery. This conclusion needs further confirmed by long-term follow-up of a large sample.

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