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Comparison of simultaneous integrated boost intensity-modulated radiation therapy and conventional accelerated hyper-fractionated radiotherapy for limited disease small-cell lung cancer

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This study was to compare toxicities, disease control and survival outcomes for limited disease small-cell lung cancer (LD-SCLC) treated with simultaneous integrated boost intensity-modulated radiation therapy (SIB-IMRT) versus conventional accelerated hyper-fractionated radiotherapy. All the patients received 4-6 cycles of platinum plus etoposide. In the SIB-IMRT group (group A) irradiation was given accelerated hyper-fractionated with the dose 57Gy at 1.9Gy twice daily to the gross tumor volume, 51Gy at 1.7Gy twice daily to the clinical tumor volume and 45Gy at 1.5Gy twice daily to the Planning Target Volume (PTV). In the conventional accelerated hyper-fractionated radiotherapy group (group B) the dose was 45Gy in 30 fractions at 1.5Gy twice daily to the PTV. Total of 73 patients were enrolled in the study (35 group A, 38 group B). The white blood cell depression was significantly more common in patients who received SIB-IMRT ($P < 0.001$) and the differences of the other toxicities were not significant between the two groups ($P < 0.05$). There was a trend toward improved local control for the group A, with an estimated 2-year loco regional recurrence-free survival at 73.8% versus 66.4% for the group A versus the group B, respectively ($p = 0.350$). The median progression free survivals were 29.3 months and 24 months, respectively ($p = 0.080$). The median overall survivals were 37.7 months and 31.9 months, respectively ($p = 0.108$). In one word, SIB-IMRT was well-tolerated in patients with LD-SCLC, and demonstrated a potency to get better progression free survival. It is worth further evaluating in large prospective clinical trials.

Biography

Baosheng Li has completed his PhD/MD in 2004 from Southeast University. He is the Director of the Department of Radiation Oncology and Vice President of Shandong Cancer Hospital. He has published more than 150 papers in reputed journals and has been serving as an Editorial Board Member of several journals.

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