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Original Article

Cost-effectiveness of temozolomide for the treatment of newly diagnosed glioblastoma multiforme[†]

A report from the EORTC 26981/22981 NCI-C CE3 Intergroup Study

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cost-effectiveness analysis • economic evaluation • temozolomide • radiotherapy • glioblastoma multiforme

ABSTRACT

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BACKGROUND.

The study aimed to compare the cost-effectiveness of concomitant and adjuvant temozolomide (TMZ) for the treatment of newly diagnosed glioblastoma multiforme versus initial radiotherapy alone from a public health care perspective.

METHODS.

The economic evaluation was performed alongside a randomized, multicenter, phase 3 trial. The primary endpoint of the trial was overall survival. Costs included all direct medical costs. Economic data were collected prospectively for a subgroup of 219 patients (38%). Unit costs for drugs, procedures, laboratory and imaging, radiotherapy, and hospital costs per day were collected from the official national reimbursement lists based on 2004. For the cost-effectiveness analysis, survival was expressed as 2.5 years restricted mean estimates. The incremental cost-effectiveness ratio (ICER) was constructed. Confidence intervals for the ICER were calculated using the Fieller method and bootstrapping.

RESULTS.

The difference in 2.5 years restricted mean survival between the treatment arms was 0.25 life-years and the ICER was €37,361 per life-year gained with a 95% confidence interval (CI) ranging from €19,544 to €123,616. The area between the survival curves of the treatment arms suggests an increase of the overall survival gain for a longer follow-up. An extrapolation of the overall survival per treatment arm and imputation of costs for the extrapolated survival showed a substantial reduction in ICER.

CONCLUSIONS.

The ICER of €37,361 per life-year gained is a conservative estimate. We concluded that despite the high TMZ acquisition costs, the costs per life-year gained are comparable to accepted first-line treatment with chemotherapy in patients with cancer. Cancer 2008. © 2008 American Cancer Society.

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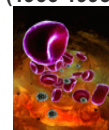
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