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The cost-effectiveness and cost-utility of high-dose palliative radiotherapy for advanced non-small-cell lung cancer.

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Abstract: To compute cost-effectiveness/cost-utility (CE/CU) ratios, from the treatment clinic and societal perspectives, for high-dose palliative radiotherapy treatment (RT) for advanced non-small-cell lung cancer (NSCLC) against best supportive care (BSC) as comparator, and thereby demonstrate a method for computing CE/CU ratios when randomized clinical trial (RCT) data cannot be generated.

Unit cost estimates based on an earlier reported 1989-90 analysis of treatment costs at the Vancouver Island Cancer Centre, Victoria, British Columbia, Canada, are updated to 1997-1998 and then used to compute the incremental cost of an average dose of high-dose palliative RT. The incremental number of life days and quality-adjusted life days (QALDs) attributable to treatment are from earlier reported regression analyses of the survival and quality-of-life data from patients who enrolled prospectively in a lung cancer management cost-effectiveness study at the clinic over a 2-year period from 1990 to 1992.

The baseline CE and CU ratios are $9245 Cdn per life year (LY) and $12,836 per quality-adjusted life year (QALY), respectively, from the clinic perspective; and $12,253/LY and $17,012/QALY, respectively, from the societal perspective. Multivariate sensitivity analysis for the CE ratio produces a range of $5513-28,270/LY from the clinic perspective, and $7307-37,465/LY from the societal perspective. Similar calculations for the CU ratio produce a range of $7205-37, 134/QALY from the clinic perspective, and $9550-49,213/QALY from the societal perspective.

The cost effectiveness and cost utility of high-dose palliative RT for advanced NSCLC compares favorably with the cost effectiveness of other forms of treatment for NSCLC, of treatments of other forms of cancer, and of many other commonly used medical interventions; and lies within the US $50, 000/QALY benchmark often cited for cost-effective care.

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