The cost of radiotherapy for 5-year local control and overall survival benefit

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Introduction

Identifying the optimal allocation of resources to improve health is a major challenge to policy makers. The rapid uptake of new treatment strategies over the last decade in an under-resourced global environment highlights the need to develop a better understanding of costs and benefits of radiotherapy (RT).

Aim

To estimate the costs of 5-year local control and overall survival benefits of radiotherapy in Australia.

Methods

Estimating benefit

Local control (LC) and overall survival (OS) benefits of RT at 5-years were identified through systematic literature review

Optimum fractions

The optimal number of fractions per treatment course was estimated for 26 tumour sites

Estimating cost

Activity based costing was used to allocate cost to all RT activities extracted from the local RT information system (July 2016 to June 2017)

Cost per fraction

Cost per activity (fraction) was determined by dividing the average total cost per patient by the average number of activities

Cost per benefit

Cost per LC=(No. of fractions/LC) X cost per fraction

Cost per OS=(No. of fractions/OS) X cost per fraction

Results

- The average cost per fraction for all cancers was AU$276.
- The estimated cost benefit of RT was AU$23,585 per 5-year local control and AU$86,480 per 5-year overall survival for all cancers.

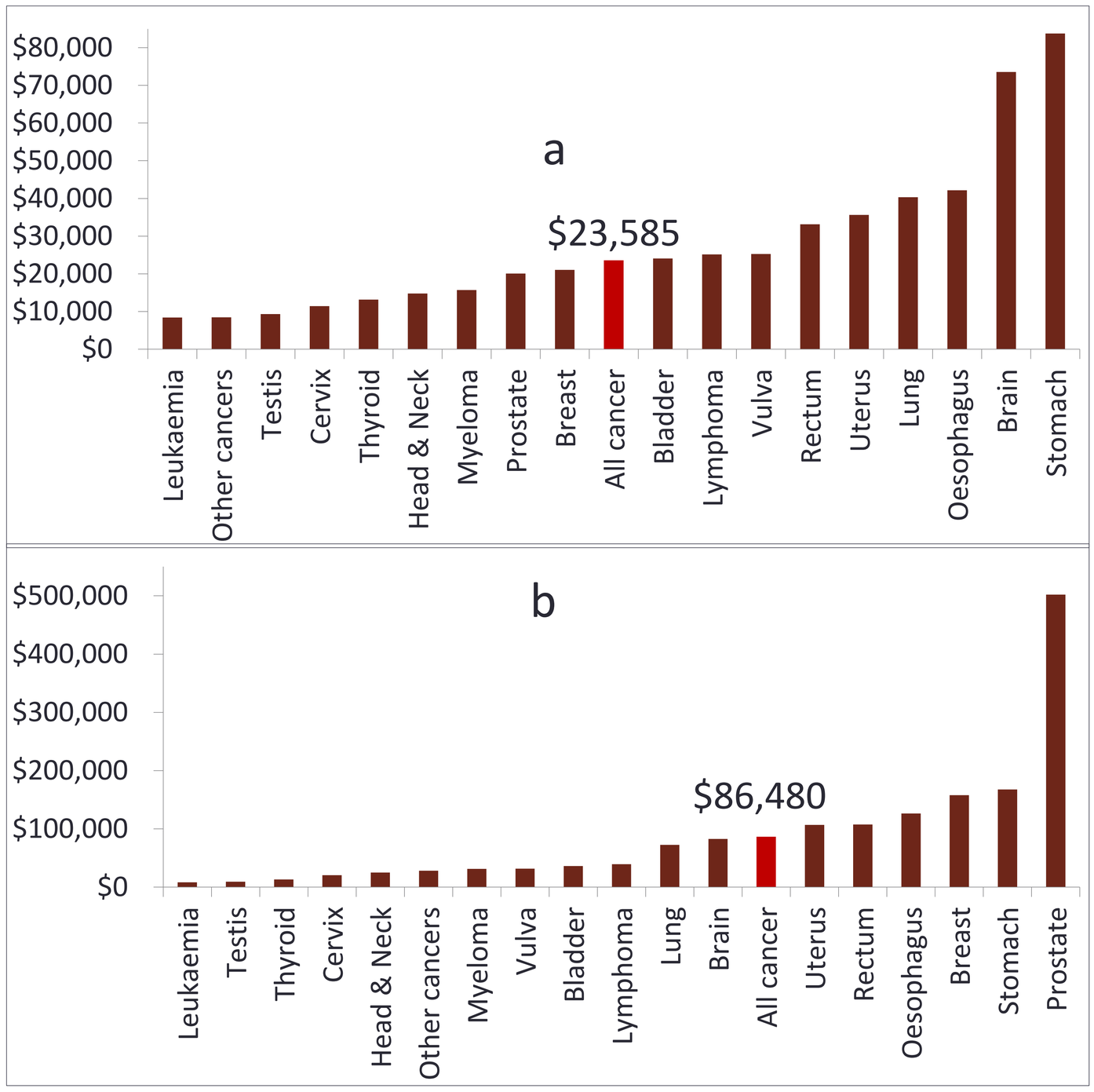

Figure 1: Cost per local control (a) and cost per overall survival (b).

Implications

- **The cost of AU$86,480 would translate to AU$17,296 for 1-year overall survival gain. Therefore, the cost of radiotherapy is inexpensive if delivered optimally.**
- Policy implications from this study include knowledge about cost to deliver radiotherapy to allow for valuation of the expected benefit at a population level.

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