Cost Effectiveness of Intensity Modulated Radiotherapy (IMRT) versus Conventional Radiotherapy for the Treatment of Head and Neck Cancers in India: A Study Protocol

Akashdeep Singh Chauhan,Shankar Prinja,Sushmita Ghoshal,Roshan Verma

Abstract

Background: The field of cancer cure is flooded with various newer technologies ranging from advanced form of surgeries to new drugs to novel forms of radiotherapy techniques. While the newer forms of radiotherapy i.e., Intensity modulated radiotherapy (IMRT) or 3-dimensional conformal radiotherapy (3D-CRT) may have the potential of providing improved health outcomes, but they require an additional cost. Thus, it becomes necessary to compare the costs and benefits of a new technology, before considering its inclusion in the current health system. The present study will be done to assess the cost effectiveness of IMRT as compared to the conventional 2 dimensional radiotherapy (2DRT) for the treatment of head and neck cancers (HNCs) in India.

Methods: The present study will be a model based effectiveness evaluation. The study will include collecting data on health system cost and out of pocket expenditure incurred on the treatment of HNC, followed by assessment of health outcomes in the form of survival rates and quality of life subsequent treatment with IMRT and 2DRT and finally the development of Markov Model for estimating the incremental cost effectiveness ratio. The present study will be undertaken in the Departments of Radiotherapy and Otolaryngology of a large tertiary care hospital in North India. Health system costs will be assessed using bottom up methodology. Cost of illness approach would be followed for interviewing patients for assessing out of pocket (OOP) expenditure. Patients will be recruited from the Radiotherapy Department, and will be followed up till one year for assessing quality of life weights. Systematic review cum meta-analysis of the existing randomised controlled trials comparing IMRT and 2DRT would be undertaken for assessing pooled survival rates. A Markov model based on the natural history of the progression of HNC will be developed, following societal perspective and lifetime study horizon.

Citation: Akashdeep Singh Chauhan,Shankar Prinja,Sushmita Ghoshal,Roshan Verma Cost Effectiveness of Intensity Modulated Radiotherapy (IMRT) versus Conventional Radiotherapy for the Treatment of Head and Neck Cancers in India: A Study Protocol. **protocols.io**

dx.doi.org/10.17504/protocols.io.jzvcp66

Published: 23 Sep 2017

Protocol