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Cost of radiotherapeutic management of patients with cancer in regional cancer center in India

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Introduction: With around 10,00,000 new patients with cancer annually, India accounts for more than half of burden of cancer patients in developing countries. Multi-modality management of cancer, technologic and skill intensive diagnosis and therapy causes significant strain on already burdened health-care system of developing countries. Grant-in-aid is provided by government, various national and international organizations to facilitate prevention and management of cancer in resource-poor countries like India. However optimal utilization of these resources requires computation of cost of cancer management of individual cancer by site / system and histology. Political pressure has become drivers in reducing waiting time and provision of any radiotherapy to patients presenting to oncology centers. In such milieu, we need to compute the cost of radiotherapy in developing countries to plan for future budget outlay and investment.

Methods: Data regarding technology/technique required to start any radiotherapy for patients with cancer was obtained from radiotherapy planning register. Data of patients with cancer treated by single radiation oncologist in Department of Radiation Oncology, Kidwai Memorial Institute of Oncology, Bangalore from August 2012 to October 2016 was collected.

Results: Cost of 3D conformal radiotherapy management of 12 pediatric tumor, 50 brain tumors, 70 head and neck cancer, 20 thoracic malignancies, 6 breast cancer and 5 gynecologic malignancies were INR 2,40,000, 32,10,000, 53,40,000, 15,00,000, 4,10,000 and 3,40,000 respectively. Cost for radiotherapy management of around 480 patients is 8400000, 1080000, 1176000 and 192000 for Co-60 teletherapy, HDR brachytherapy, LDR brachytherapy and x-ray simulation respectively.

Conclusion: 3D conformal radiotherapy for nearly 160 patients costed INR 1,10,40,000 and treatment by Co-60 teletherapy for management of 480 patients costed INR 8400000 over the period of four years. Treatment by 3D conformal radiotherapy is 3 to 4.5 times more expensive than that by Co-60 teletherapy equipment. However, malignancies of brain, lung, nasal cavity, nasopharynx, stomach, pancreas, gall bladder, prostate, pediatric tumors are best managed by 3D CRT or IMRT.

Country

India

Institution

Kidwai Memorial Institute of Oncology

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