

## Addressing the status of radiotherapy facilities in Bhopal: World leader in mouth cancers

Sir,

In 2006, in one million Indian population, there were about 860 incident and 2600 prevalent cancer cases. By 2016, this number is expected to have increased to 1060 and 3200, respectively.<sup>[1]</sup> In India, over 70% of cancer patients report for diagnostic and treatment services in advanced stages of their illness, where radiotherapy (RT) stands as one of the main modalities of the treatment. Unfortunately, India has a very low density of RT services, approximately 0.3 megavoltage high energy machine per 100,000 population as compared to the Western standards of one or more machine per million.<sup>[2]</sup> Moreover, recent trends show an increase in the RT cost over the last decade, due to new facilities being established in the private sector with interlinked quality assurance and technological evolution.<sup>[3]</sup>

Overall, 57.5% of global head and neck cancers occur in Asia, especially in India, for both sexes.<sup>[4]</sup> Nearly 800,000 new oral cancers are diagnosed every year in India. Madhya Pradesh (MP) is the second largest state of the country in terms of area with a population of around 72 million.<sup>[5]</sup> Tobacco consumption is widely prevalent in the state, and the incidence of tobacco-related cancers is the world's highest along with the Northeast and Southern Indian districts. Bhopal is the capital city of the state and is (in) famous for the fateful gas tragedy of 1984. Bhopal has the world's highest age-standardized incidence of both tongue (10.9) and mouth cancers (9.6) in males.<sup>[4]</sup>

There is a wide gap in the availability and access of RT facilities in most parts of India, mainly in the public funded hospitals. Moreover, RT machine burden in a public cancer hospital in India increases the waiting time, and 25% of advised patients do not comply with the prescribed treatment. Infrastructure, machine, and manpower constraints lead to more patients being treated on cobalt (74%) and by two-dimensional (78%) techniques.<sup>[6]</sup> Government Funded Public Institutions need to evaluate the standards of RT service. The number of cancer cases is estimated to be increased to 1,220,000 by 2016 while the existing treatment facilities for cancer control in terms of RT facilities is inadequate to take care of even the present load.<sup>[1]</sup> In 2011, telecobalt to linear accelerator (LA) ratio in India was 277/157 (1.8:1)<sup>[7]</sup> and has shown no significant change until date. According to the 2011 census, the population of MP is 72,597,565, and the number of incident cancer cases in the state is around 76,320.<sup>[1,5]</sup> In accordance with the international (World Health Organization and International Atomic Energy Association) standards of 500 patients per machine,<sup>[1]</sup> the total requirement of RT machines in the state would be around 150 by 2016, and a shortfall of 93 RT units in the state of MP is estimated.<sup>[1]</sup> This situation would also create a shortage of skilled RT professionals required to operate the required number of RT machines. The existing RT facilities in Bhopal entail three centers, one in the Government Medical College (Cobalt 60 teletherapy) and two in the private centers (LA). It is worth mentioning that the government setup provides its services free of

cost while there is a significant cost factor involved in the private hospitals.<sup>[3]</sup>

In a country like India where more than 80% of the patients present in advanced stages of disease and where there are geographic variation in treatment facilities, it leads to a bigger disparity between the patients who can afford the costly treatment in private institutions versus those who are totally dependent on the government set up. The most efficient way to encounter such a situation is to have pragmatic program and policies based on currently available scientific information and sound public health principles.<sup>[1]</sup>

Bhopal is the capital of the state and has an alarming incidence of head and neck cancers. The prevalence of tobacco consumption is widespread among various groups studied.<sup>[8-10]</sup> With Government Medical College catering to the urban as well as the surrounding rural population, all possible efforts are mandated to improve the existing RT facilities ensuring a quality treatment within the realm of the government institution. This scenario is likely to benefit the poor patients as the treatment is delivered free of cost. In addition, this would enhance the quality of education to the postgraduate students and aid in cancer research. Moreover, with the students receiving hands on modern RT training and expertise, the shortage of required manpower as skilled RT professionals can be successfully fulfilled. This letter comes as a sincere appeal to the concerned authorities calling for an immediate intervention and up gradation of the RT facilities at the Government Medical College in Bhopal.

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### Conflicts of interest

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