

## High Dose Rate Endobronchial Brachytherapy: As an effective Palliative Treatment Modality in Bronchial Carcinoma

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### ABSTRACT

**Background:** Treatment of inoperable carcinoma lung poses a challenge both due to the magnitude and local symptoms with resultant worsening of performance status of the patients. Endobronchial brachytherapy is an established modality for palliation of symptoms, namely dyspnea, hemoptysis. This study was aimed at evaluating the role of HDR endobronchial brachytherapy with external radiotherapy for symptomatic improvement.

**Method:** 50 patients of inoperable Ca Lung with significant bronchial component, including non-small cell and small cell, were assessed. Patients were evaluated with fiber optic bronchoscopy regarding degree of bronchial obstruction. They were randomized into two treatment arms:

Arm A: Endobronchial brachytherapy (EBBT) followed by external RT.

Arm B: External beam radiotherapy followed by endobronchial brachytherapy.

Endobronchial brachytherapy was delivered using remote after loading HDR brachytherapy with Ir192 source. Dose for external RT was 30 Gy/10#, on Linear Accelerator or Co-60 teletherapy unit. Endobronchial brachytherapy dose range was 6.5 Gy-10 Gy in single or two fractions, one week apart. Bronchoscopic assessment was done after one week of each fraction of endobronchial brachytherapy as well as after completion of treatment at every 1 month for 3 months. Response to the therapy was also assessed with the Speiser scoring criteria.

**Results:** Total 50 patients were randomized into two arms. There were 20 patients in arm A and 30 patients in arm B. In short follow up, complete response for hemoptysis was achieved in 98% of patients (n=14), 80% patients showed complete response to dyspnea (n=46). Symptoms like chest pain and cough showed less improvement after endobronchial brachytherapy. Re-expansion of atelectasis was seen in 100% patients (n=29). Values in both the arms were compared using Pearson Chi-square test. The pre- and post-treatment symptomatic differences were comparable in both the arms and statistically significant for dyspnea, chest pain, cough, hemoptysis.

**Conclusion:** Endobronchial brachytherapy, as documented, is an important palliative modality to relieve the obstructive symptoms like dyspnea and hemoptysis, in patients with intrabronchial malignant mass.

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