

An Editorial Note on Bronchial Thermoplasty in Patients

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Editorial

Bronchial thermoplasty is a cutting-edge asthma treatment. It is a bronchoscopic method that involves the application of radiofrequency energy to the airway wall, resulting in a reduction in airway smooth muscle burden. In individuals with severe uncontrolled asthma, bronchial thermoplasty has been demonstrated to minimise asthma exacerbations and enhance quality of life in human trials. It has been shown to be a safe procedure, with the majority of adverse events occurring early and are minor. More research is needed to determine the specific effects of bronchial thermoplasty on asthmatic airways, as well as the best parameters to use when selecting patients for this unique technique. Bronchial Thermoplasty is a process in which radiofrequency radiation is delivered to the airways during bronchoscopy in order to selectively ablate airway smooth muscles. The FDA approved Bronchial Thermoplasty in 2010 and it is still the sole device-based non-pharmacological treatment option for severe asthma. In light of the FDA approval process, we evaluate the trials that led to the approval of Bronchial Thermoplasty. The utilisation of Bronchial Thermoplasty and emerging pharmaceutical treatments for severe asthma are discussed according to current international recommendations.

Bronchial thermoplasty (BT) is a non-pharmacological endoscopic treatment for individuals with severe chronic asthma that uses a device called the Alair™ Catheter to provide regulated heat (Boston Scientific, Natick, MA, USA). The Alair™ technology is the first to send radiofrequency or thermal radiation to the bronchi to selectively lower the quantity of airway smooth muscle (ASM). Clinical outcomes including as symptom control, severe exacerbation rate, hospitalisation, quality of life, and number of working or school days lost for asthma were all shown to improve significantly in the literature. Aside from smooth muscle effects, BT has been shown to alter the inflammatory pattern. Bronchial thermoplasty demands an experienced clinician with bronchoscopy competency training, rigour, dexterity, and a complete understanding of airway anatomy.

Furthermore, in order to get the best response following BT, the appropriate selection of severe asthma patients is critical. This article goes through the basics of the BT device and how to use it. The criteria for choosing the correct patient and managing them before and after BT will be discussed. Targeted radiofrequency radiation is delivered to the bronchial airway walls, resulting in partial ablation of the airway smooth muscle that causes bronchoconstriction. It's FDA-approved for the treatment of severe, long-term asthma. Multiple large clinical trials, including a recent "real-world" study, show significant improvements in asthma-related quality of life, as well as a reduction in asthma exacerbations, emergency room visits, and hospitalizations, after BT. We discuss the current state of BT treatment in severe persistent asthma and share a decade of BT research and clinical experience in this article.

We offer our personal experience and introduce the three "Is" (identification, implementation, and intensive follow-up) that we feel promote positive patient results and aid in the development of a successful BT programme.

Bronchial thermoplasty is a novel treatment for individuals with severe asthma and persistent airflow blockage that has been shown to have a high level of efficacy and safety over time. The importance of bronchial thermoplasty in severe asthma, its mechanism of action, proper patient selection, current evidence, and new developments of this therapy are all covered in this article. Bronchial thermoplasty is the first endoscopic procedure approved for the treatment of severe asthma. It has been developed during the last fifteen years. This therapy targets bronchial smooth muscle using radiofrequency applied to the airway wall. The use of rescue drugs, urgent care visits, and the rate of exacerbations have all decreased significantly in patients treated in randomised controlled trials. Because there are no clear predicted signs of response to this costly, minimally invasive procedure, it is now considered a last-resort therapeutic option. Eosinophils, thickness of the basal membrane, epithelial sloughing, vascular alterations, smooth muscle hypertrophy and hyperplasia, and hyperplasia of the mucous glands are all symptoms of asthma. Studies on the involvement of hypersensitivity and inflammation in asthma have recently been published, but the significance of bronchial smooth muscle in asthma remains unknown.

Bronchial thermoplasty is an endoscopic procedure approved by the US Food and Drug Administration (FDA) for the treatment of severe refractory asthma. It involves the local delivery of radio frequency at 65°C to the airways with the goal of reducing airway smooth muscle and thus controlling bronchospasm (ASM). Several recent studies have found that bronchial thermoplasty for asthma improves clinical outcomes, such as symptom control, reduced exacerbation and hospitalisation rates, increased quality of life, and a reduction in the number of working days or school days lost due to asthma. The new research reveal a decrease in ASM and alterations in inflammatory patterns after bronchial thermoplasty. Bronchial thermoplasty has also been suggested to modulate neuroendocrine epithelial cells, bronchial nerve terminals, TRPV1 nerve receptors, and type-C unmyelinated fibres in the bronchial mucosa. In the presence of bronchial hyperreactivity, this may entail blocking the central and local reflexes that activate bronchospasm. Several questions about bronchial thermoplasty's application, mechanism of action, patient selection, and long-term effects remain unanswered. The importance of ASM in asthma pathogenesis and critical components of bronchial thermoplasty are described in this review, with a focus on the possible clinical consequences of this promising surgery beyond ASM reduction. Bronchial Thermoplasty (BT) is a groundbreaking procedure that reduces bronchial smooth muscle by inserting a basket catheter into the bronchus and applying a high-frequency current directly to the bronchi.

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