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| A re-examination of response rates to bronchial thermoplasty |
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| **Introduction/Aim:** Using the Asthma Control Questionnaire (ACQ), about 70% of patients with difficult-to-treat asthma will show an improvement after bronchial thermoplasty (BT). However, the reasons for non-response in the remaining 30% have not been elucidated. In this study we sought to re-examine response rates using multiple outcome parameters.**Methods:** The data of the first 100 patients recorded in the Australian Bronchial Thermoplasty Registry was examined for baseline demographic and clinical characteristics, as well as outcomes measured at 6 and 12 months post-BT (including ACQ, exacerbation frequency, medication usage and spirometry). Patients were drawn from four Australian hospital institutions. Treatment response in key outcome areas was analysed with analysis of variance for repeated measures, and unpaired t-tests used to compare responders and non-responders.**Results:** The table below presents the characteristics of the group and the response to treatment.

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|  | **baseline** | **6 months** | **12 months**  | **p** |
| ACQ | 3.1±0.9 | 1.7±1.1 | 1.6±1.1 | 0.001 |
| Exacerbations (6mths) | 3.7±3.5 | 0.8±1.2 | 0.8±1.3 | 0.001 |
| PNL (mg/d) | 6.9±8.5 | 3.3 ±5.6 | 3.3 ± 5.8 | 0.001 |
| SABA (puffs/d) | 9.6±7.3 | 3.9±5.9 | 3.4±4.9 | 0.001 |
| FEV1 (% pred) | 54.8±18.5 | 58.3±19.7 | 58.7±19.7 | 0.009 |

At 12 months following BT, 77% of patients demonstrated improvement in ACQ greater than 0.5 (ACQ responders). Clinical characteristics at baseline could not separate ACQ responders and non-responders. 87% of patients experienced a 50% improvement in the frequency of exacerbations requiring oral steroids. When ACQ improvement and exacerbation frequency were cross-tabulated, 82% of the ACQ non-responders experienced a significant reduction in exacerbation rate, and 95.6% of patients demonstrated an improvement in either or both of these domains.

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|  | Delta Exacerbations >50% | Delta Exacerbations <50% |
| Delta ACQ <0.5 | 18 (20%) | 4 (4.4%) |
| Delta ACQ >0.5 | 60 (66.6%) | 8 (8.8%) |

**Conclusion:** This analysis suggests that almost all patients respond to BT and explains why a non-responder phenotype has been difficult to identify.**Grant Support:** None**Key words**: Asthma, Bronchial Thermoplasty |