

# Can patients achieve sufficient peak inspiratory flow rate (PIFR) with Turbuhaler® during acute exacerbation of asthma?

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## ABSTRACT

**Introduction:** The single maintenance and reliever therapy (SMART) delivered through Turbuhaler® has been widely used in Malaysia. Patients treated with SMART are not prescribed separate reliever inhalers but are dependent on the Turbuhaler® during acute asthma. The peak inspiratory flow rate (PIFR) is crucial in drug delivery from a DPI, however, there are concerns that during acute exacerbation of asthma, patients are unable to achieve adequate PIFR. The present study aimed to assess PIFR at resistance setting matching Turbuhaler® in patients with acute exacerbation of asthma. **Methods:** A six-month cross-sectional study was conducted at the emergency department (ED) of Hospital Sultanah Bahiyah and Hospital Kulim, Kedah. Adult patients diagnosed with mild to moderate acute exacerbations of asthma were recruited. The PIFRs were measured using the In-Check Dial G16 which was set to simulate the resistance of Turbuhaler® (R3). The PIFRs were assessed before (pre) and after (post) after initial bronchodilator (BD) treatment at the ED. The minimal required PIFR was defined as flow rates  $\geq 30$  L/min. **Results:** In a total of 151 patients, 81 female and 70 male patients were enrolled in the study with a mean age of 38 years old (range 18-71). It was found, that 98% (n=148) of patients can achieve minimal PIFR required pre- and post-BD. The mean PIFR pre-BD was  $60 \pm 18.5$  L/min and post-BD was  $70 \pm 18.5$  L/min. **Conclusion:** The study assured that most asthmatic patients can achieve sufficient PIFR from Turbuhaler® during acute exacerbation of asthma.