

# A nationwide survey on awareness and knowledge about Bronchial Provocation Test (BPT) amongst doctors in Malaysia

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## ABSTRACT

**Background:** Bronchial provocation test (BPT) is widely used internationally not only to evaluate bronchial responsiveness in conditions especially asthma, but is also utilized as a marker of control, severity and prognosis for asthma. However, the uptake of BPT in certain countries including Malaysia remains low. We aimed to explore this lack of knowledge by assessing the current level of awareness and knowledge on BPT amongst doctors in Malaysia.

**Methods:** A nationwide web-based questionnaire targeting doctors was sent through social media (Facebook, WhatsApp and Telegram) and Malaysian Medical Association (MMA) mailing lists between 1 October 2020 – 5 February 2021.

**Results:** In all 415 survey responses were analysed from doctors of various grades namely medical officers to consultants. A total of 404 (97.35%) encountered patients with asthma in their daily practice. According to specialty: 169 (40.72%) were from primary care, 121 (29.16%) internal medicine, 50 (12.05%) pulmonary medicine and 75 (18.07%) others. Only 163 (39.28%) were aware of BPT as a tool to diagnose asthma. 232 (55.90%) and 124 (29.88%) regarded BPT as an important test and felt confident to refer patients for BPT respectively. Of those participants who were not confident to refer: 35.17% were unsure of BPT indications, 33.21% were unsure of centres providing BPT, 8.17% cited logistic reasons, 6.04% were concerned of possible BPT side effects. 387 (93.25%) wanted more training in BPT. The median BPT knowledge score was 20% (1 out of 5). Awareness and knowledge were affected by specialty but not by: region of practice, gender, age and grade from logistic regression analysis.

**Conclusion:** Various national level programs and targeted local interventions are much needed to increase the awareness, knowledge and uptake of BPT in Malaysia.

## KEYWORDS:

bronchial provocation test, knowledge, awareness, questionnaire, survey, bronchial asthma

## INTRODUCTION

Asthma is a common but potentially serious medical condition characterised by chronic airway inflammation. Typical symptoms include wheezing, shortness of breath, cough and/or chest tightness that varies in both intensity and over time.<sup>1</sup> The diagnosis of asthma requires a history of suggestive symptoms together with clear demonstration of variable expiratory airflow limitation.<sup>1-3</sup> Diagnosing asthma in daily clinical settings can be challenging as various conditions such as gastroesophageal reflux, chronic obstructive pulmonary disease and anxiety disorders can present with asthma-like symptoms.<sup>1</sup> Attempts to obtain a confident diagnosis of asthma from a single time-constrained doctor-patient encounter can be complicated as asthma is often episodic, variable and follows a relapsing remitting course.<sup>4</sup> This has led to a common practice of empirical asthma treatment in Malaysia and certain countries abroad. Studies have clearly shown that many patients with asthma are poorly investigated in the community setting.<sup>5-7</sup>

Bronchial provocation test (BPT) is widely used internationally to evaluate for the presence of airway hyper-responsiveness (AHR) in conditions especially (but not limited to) asthma, but also as a marker of disease control,<sup>8</sup> severity<sup>9,10</sup> and prognosis<sup>11</sup> for asthma. BPT is commonly used to confirm the diagnosis of asthma among patients presenting with asthma-like symptoms with normal or near normal volume of air at the end of the first second of force expiration (FEV1).<sup>12</sup> However, the uptake of BPT in some countries including Malaysia remains low. In Malaysia, BPT was first available back in July 2008 but to date, only very few specialized centres (Serdang Hospital, Selangor; Queen Elizabeth Hospital, Sabah; Sarawak General Hospital, Sarawak) are offering the test.<sup>12</sup> The primary aim of this study was therefore to evaluate the level of awareness and knowledge of BPT amongst doctors in Malaysia.

## MATERIALS AND METHODS

### Study design

We conducted a nationwide, cross sectional, self-administered web-based questionnaire among medical doctors in Malaysia. The questionnaire was generated by using Google Forms and consisted of a total of 23 questions that were subdivided into 2 parts: part A with 18 questions and part B

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