# Assessing the Impact of Comorbidity on Asthma Severity and Asthma Control in Adult Asthma Patients

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## INTRODUCTION

Asthma is commonly co-existent with several comorbidities, mainly gastro-esophageal reflux disease, obesity, diabetes mellitus and cardiovascular diseases. Despite the availability of asthma guidelines and effective asthma treatment, the management of asthma becomes difficult in asthma patients living with these comorbidities [1].

Therefore, the assessment of asthma control and severity in asthma patients living with and without asthma related comorbidities may be helpful to achieve and maintain the better asthma management in majority of the patients [2].

## OBJECTIVE

The aim of this study was to determine the impact of comorbidities on asthma severity and asthma control in asthma patients.

## METHODS

**Study Settings:** Hospital Selayang, Malaysia.

**Study Design:** Cross-sectional study.

**Sampling Method:** Purposive sampling method.

**Participants:** Fifty five asthma patients (aged > 18 years old; able to perform spirometry; nil cognitive disability; not diagnosed with other respiratory diseases) were recruited, post-signed consent.

**Data Collection:** The socio-demographic data and comorbidities were recorded from patients' medical records.

The asthma control was assessed by administering the Malaysian version of asthma control test (ACT) to the patients. The lung function testing was performed by CosMed® spirometer.

The clinical and functional criteria for asthma diagnosis and severity were used according to Global Initiative for Asthma (GINA) guidelines.

**Data Analysis:** The data were analyzed by Statistical Package for Social Sciences (SPSS)® for descriptive analysis and independent t-test.

**Ethical Approval:** This study complies with the Declaration of Helsinki (DoH) and was approved by Medical Research and Ethics Committee (MREC) via National Medical Research Registry (NMRR), Ministry of Health (MOH), Malaysia as shown in figure 1.

Special thanks to the staff of Hospital Kuala Lumpur, Malaysia for their assistance during data collection.

**Figure 1: Ethical approval flow sheet**

Postgraduate Academic and Ethics Committee, Faculty of Pharmacy, UiTM, Puncak Alam, (600-FF-(PT-9/19))

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Research Ethics Committee (REC), Research Management Institute (RMI), UiTM Shah Alam, (600-RMI-(5/1/16))

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Approval from Heads of Department of Medicine and Directors of Hospital Selayang and Hospital Sungai Buloh, Selangor, Malaysia

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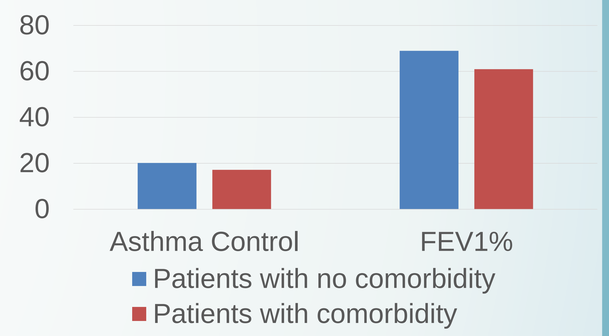
Medical Research and Ethics Committee (MREC), via National Medical Research Registry (NMRR), Ministry of Health (MOH), Malaysia (NMRR-14-557-20184)

## RESULTS

**Table 1: Socio-demographic characteristics (n=55)**

| Variable | Category | Mean (±SD) | N % |
|---|---|---|---|
| **Age** | | 53.21 ± 16.45 | |
| **Gender** | Male | | 19 (34.5) |
| | Female | | 36 (65.5) |
| **Ethnicity** | Malay | | 33 (60) |
| | Indian | | 12 (21.8) |
| | Chinese | | 10 (18.2) |

**Figure 2: Group comparison for independent t-test**




The results of independent t-test showed that the mean score of asthma control was significantly higher in group of asthma patients without comorbidities (20.17 ± 3.70) than asthma patients with comorbidities (i.e. 17.15 ± 3.17; t = 2.959 (53), p = 0.005). Whereas the mean FEV1 % values were not significantly different in groups of asthma patients without comorbidities (68.96 ± 17.16) and patients with comorbidities i.e. 60.98 ± 17.19; t = 1.698 (53), p = 0.095).

## CONCLUSION

The asthma control showed a significant difference between asthma patients with comorbidities and asthma patients without comorbidities. But the values of $FEV_1$ % were not significantly different between two groups. The association of comorbidies with asthma outcomes should be explored in other populations with greater sample size to address the issues of generalizability of the findings.

## REFERENCES

1. Global Initiative for Asthma (GINA). (2012). Global Strategy for Asthma Management and Prevention. Retrieved October 14, 2013, from www.ginasthma.org.
2. The Global Asthma Report 2014. Global Asthma Network. Retrieved from: http://www.globalasthmanetwork.org, [Accessed March 01, 2015].