

# A Cross Sectional Study on Adult Asthma Patients' Adherence to Inhaled Corticosteroids (ICS) In Hospital Putrajaya

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## ABSTRACT

**Introduction:** Inhaled corticosteroids (ICS) are a hallmark treatment for asthma. Despite its efficacy, patient adherence on ICS still remains low. This study assessed the medication adherence towards ICS medications among adult asthma patients and the relationship between contributing factors and adherence to ICS medications. **Methods:** In this cross-sectional study, patients ( $\geq 18$  years old) diagnosed with bronchial asthma for more than 1 year were given a set of self-administered, validated questionnaires during their visit at Outpatient Pharmacy, Hospital Putrajaya (HPJ). Demographic factors of patients, their knowledge on asthma; adherence level for ICS medication and asthma control score were collected. Data analysis was done to study the relationship between contributing factors with adherence level to ICS medications using SPSS V20. **Results:** A total of 243 patients with a median age of 57 [42.0-67.0] years old was studied. Budesonide Inhaler (36.6%) was the most commonly used type of ICS; followed by Budesonide 160mcg/Formoterol 4.5mcg Turbuhaler (26.3%) and Salmeterol / Fluticasone 50mcg /250mcg Accuhaler (11.1%). Majority of patient adherence reported was poor (60.5%), followed by intermediate (27.9%) and good (11.6%). Factors of patients that had significant association with patient adherence were gender, educational level, smoking, family history of asthma, counseling sessions with pharmacist; asthma knowledge level and asthma control level ( $p < 0.05$ ). **Conclusion:** The medication adherence towards ICS medications was poor and this study identified the group of patients. Thus, such factors identified needed effective counselling by the pharmacist to improve their adherence to ICS treatment.

# Genetic Association Study of ADRB2 rs1042714 and the Elevation of Blood Pressure among the Hypertensive Malays from Peninsular Malaysia

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## ABSTRACT

**Introduction:** Hypertension (HT) affects ~1.5 billion people worldwide. The sympathetic nervous system (SNS) is thought to partly play a role in the regulation of blood pressure (BP), via its mediation effect on vascular tone and cardiac contractility. ADRB2 is a candidate gene involves in this mechanism. However, its association with the susceptibility to HT, and its impact on the elevation of BP are inconclusive. **Methods:** This study attempts to investigate association of ADRB2-rs1042714 with the elevation of BP among Malays with HT. A total of 500 HT and 418 normotensives (NT) were recruited. Fisher exact test and Independent T-test analyses were performed. **Results:** No significant different genotype, allele, diplotype and haplotype analysis ( $p > 0.05$ ) was found between HT and NT. Further investigation revealed that HT carriers for rs1042714-CC had average higher BP; SBP, DBP, MAP, than the non-rs1042714-CC HT carriers (pSBP = 0.032, pDBP = 0.001 and pMAP = 0.001). The association between the 'CC' genotype and elevation of BP remained significant in females (pSBP = 0.024, pDBP = 0.008 and pMAP = 0.003) but not in males. **Conclusion:** In summary, ADRB2-rs1042714-CC is associated with elevated BP in female HT individuals. The variant may contribute to blunted renin release in low renin HT individuals and increased aldosterone (ALDO) secretion. Further study with a larger sample size is warranted to confirm the findings.