

## Cardiovascular Endocrinology

### CARDIOVASCULAR ENDOCRINOLOGY

#### *The Spatial Epidemiology of Patients Who Were Screened for and Diagnosed With Primary Aldosteronism in Southern Thailand*

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**Background:** In Thailand where biochemical testing for detection of primary aldosteronism (PA) is only available in a few tertiary centers, which may contribute to a delay in case detection. This study aimed to identify the geographic distribution of PA screening and diagnosis and its contributing epidemiologic and geographic factors in Southern Thailand. **Method:** Data of 688 patients who underwent PA screening between 2011–2017 were reviewed from the electronic database. The patients' residences were extracted from the identification cards or the address recorded in the hospital system. The presence of an endocrinologist and the dominant religion in each province were recorded. The province, district and subdistrict of each patient were transformed to a 6-digit administrative area code corresponding with the global one (GADM<sup>®</sup>). A generalized log-linear model was used to identify predictors for individuals being screened. **Results:** Overall, the prevalence and crude incidence rates of PA in Southern Thailand were 15.6% and 1.66/1,000,000 person-years, respectively. The provinces located adjacent to the Andaman Sea had the highest incidences of PA (3.62–5.17 patients/1,000,000 person-years). Areas with the highest screening rates were located at and near Songkhla where the major tertiary medical center is located. A multivariate log-linear model demonstrated that the distance from the major tertiary center was the only predictive factor for screening while the availability of an endocrinologist and cultural differences were not. The chances of patients who lived in Songkhla, lived less than or more than 200 km from Songkhla to receive PA screening were 100% (reference), 82% (95% CI:0.69–0.97, p-value 0.03), and 66% (95% CI:0.55–0.78, p-value < 0.001), respectively. **Conclusion:** Geographic location was the main factor contributing to a delay in case detection for PA. A public health policy should be developed to mitigate the geographic barrier thus improving the ability of patients to access healthcare services. Further research relating to the underlying risk of the disease such as genetic transmission in populations with a high incidence of PA should be performed.

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#### *Time-Varying Risk of Atrial Fibrillation in Patient With Medically and Surgically Treated Primary Aldosteronism: A Nationwide Cohort Study*

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Evidence of increased cardiovascular risk, especially atrial fibrillation, has been accumulating among patients with

primary aldosteronism (PA), but there is still limited information about long-term prognosis related to different treatment strategy. The aim of this study was not only to investigate the incidence of atrial fibrillation, but also to evaluate their time-dependent changes after adrenalectomy (surgery group) or mineralocorticoid receptor antagonists (drug group) for patients with PA compared to those with essential hypertension (EH). From a nationwide cohort in Korea (2003–2017), PA were individually matched for sex, age ( $\pm 10$  years), and index year in a 1:5 ratio with EH. The primary end point was the time-varying risk of new-onset atrial fibrillation (NOAF) among PA according to treatment mode compared to EH. The secondary end points were the risks of major adverse cardiovascular events (composite of non-fatal myocardial infarction, non-fatal stroke, and death from cardiovascular causes), hospitalization for heart failure, and all-cause mortality. Cox proportional-hazards analysis or time-dependent Cox analysis based on the Schoenfeld residuals testing were performed. We enrolled 1,418 PA patients (755 in PA surgery group and 663 in PA drug group), and matched these with 7,090 EH controls with a median of 5 years. The risk of incident NOAF was statistically higher in patients with PA (both surgery and drug groups) within the three years after diagnosis (adjusted hazard ratio, 3.02;  $p < 0.001$ ), whereas there was no statistically significance after the three years compared to EH (adjusted hazard ratio, 0.50;  $p = 0.053$ ). Patients in the PA drug group had higher risk of non-fatal stroke during the total followed up period (adjusted hazard ratio, 1.53,  $p = 0.031$ ), although the PA surgery group didn't. In contrast, patients with PA had no statistically significant difference in risks for other secondary cardiovascular outcomes. In conclusion, this propensity cohort study of adults with PA demonstrated the changeable risk of NOAF over time possibly due to the residual effect of inappropriate aldosterone levels. These findings can provide clinically relevant guidance in the monitoring the cardiovascular complications, especially NOAF and non-fatal stroke, even after treatment among patients with PA.

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#### *Tolerability and Efficacy of Long-Term Medical Therapy in Primary Aldosteronism*

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**Introduction:** Patients with primary aldosteronism (PA) have increased cardiovascular risk and studies have found