Abstract: P1425

Different risk of new-onset atrial fibrillation on patients with primary aldosteronism after surgical or medical treatment: a nationwide longitudinal cohort-based study

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On behalf: the TAIPAI study group

Topic(s):
Prevalence and Incidence of Atrial Fibrillation

Citation:
Background
Primary aldosteronism (PA) is associated with an increase of atrial fibrillation (AF) and other cardiovascular complications. However, targeted treatment effect of PA to prevent AF remains unclear.

Purpose
This study investigated the incidence of new-onset atrial fibrillation (NOAF) under different PA treatment strategies.

Methods
We analyzed longitudinal data for all PA patients treated within 1997-2009 under coverage of the national health insurance without history of AF through a well-validated algorithm. Essential hypertension (EH) patients matched by age, sex, and propensity score were enrolled as control. Using Cox regression with time-varying covariates, we examine relationship between adrenalectomy and mineralocorticoid receptor antagonist (MRA) among PA patients and NOAF, mortality, major cardiac and cerebrovascular events.

Results
We identified 2202 PA patients, with 534 receiving adrenalectomy and 1668 receiving MRA, and 8808 EH controls with mean follow-up of 4.4 years. PA patients receiving adrenalectomy had lower incidence of NOAF (adjusted HR = 0.28, p = 0.011) and combined endpoint with mortality than EH controls. In contrast, PA patient receiving MRA had comparable NOAF risk but higher risk of MACCE, MACE, combined endpoint with mortality than EH controls (adjusted HR = 1.84, 1.54, and 1.15 respectively, p all < 0.05.)

Conclusions
Compared to EH patients, PA patients receiving adrenalectomy had lower incidence of NOAF. However, PA patients receiving MRA therapy showed elevated risk of major adverse events and mortality.

<table>
<thead>
<tr>
<th></th>
<th>Adrenalectomy</th>
<th>MRA</th>
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<tbody>
<tr>
<td></td>
<td>Simple cox</td>
<td>Multivariable Cox regression*</td>
</tr>
<tr>
<td></td>
<td>regression</td>
<td>Adjusted hazard Ratio (95% CI)</td>
</tr>
<tr>
<td>Crude hazard Ratio (95% CI)</td>
<td>0.28 [0.10,0.75]</td>
<td>0.28 [0.10,0.74]</td>
</tr>
<tr>
<td>New onset Af</td>
<td>0.73 [0.49,1.10]</td>
<td>0.69 [0.46,1.04]</td>
</tr>
<tr>
<td>MACCE</td>
<td>1.08 [0.67,1.75]</td>
<td>1.01 [0.62,1.63]</td>
</tr>
<tr>
<td>MACE</td>
<td>0.29 [0.19,0.44]</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mortality + new onset Af</td>
<td>0.29 [0.19,0.44]</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Comparison of risks from NOAF and other cardiovascular events between PA patients and their EH matches, for the whole PA cohort by treatment type. * The multivariable Cox regression model selected covariates from all variables in Supplement Table by a stepwise procedure. Our analysis constructed adrenalectomy, steroid and potassium supplement for hypokalemia as time varying covariates. ** The competing risk regression model included age, gender, and propensity score as covariate.
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