

# Cystatin C in Primary Aldosteronism: Associated with Pro-inflammation, and Endothelial Dysfunction

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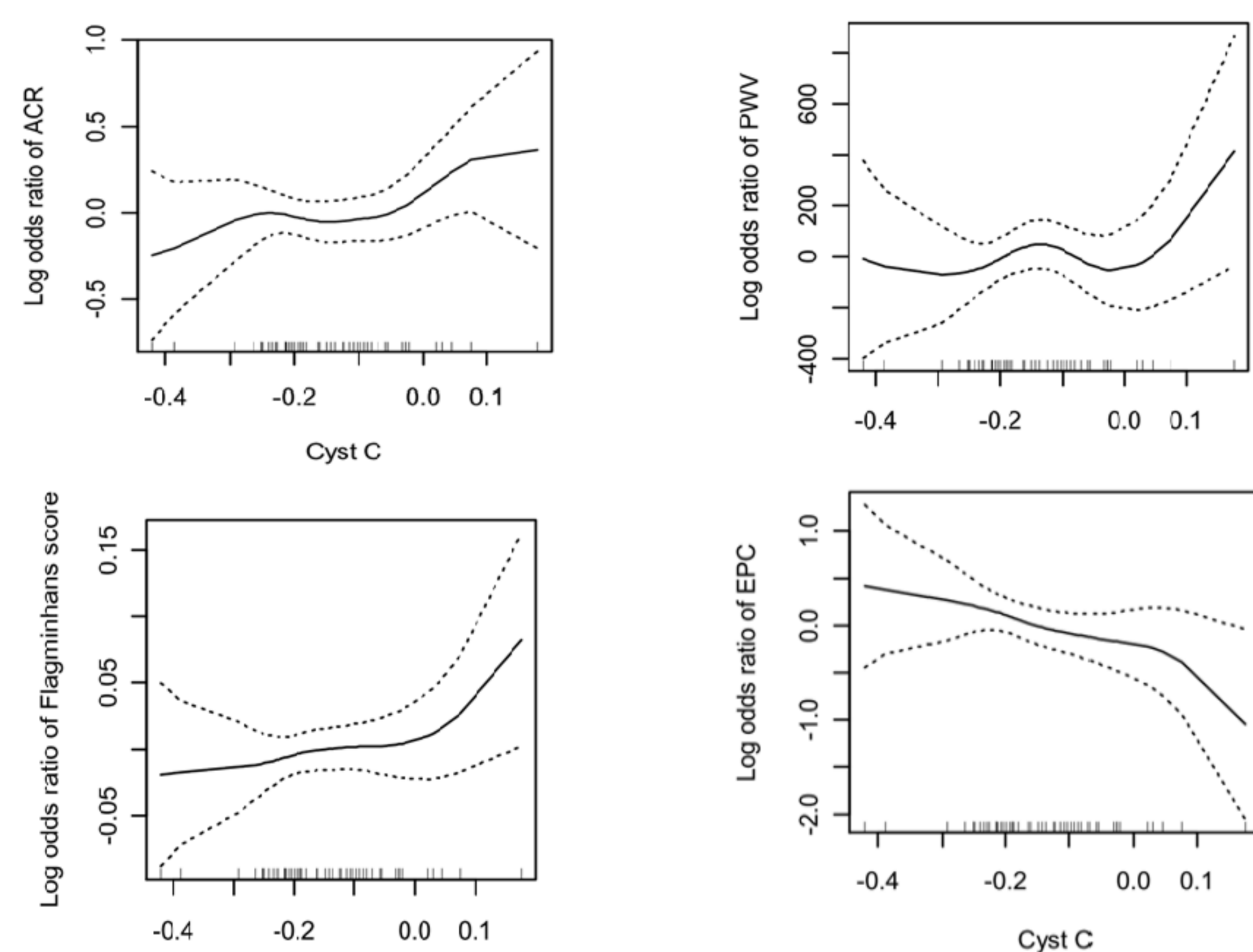
## OBJECTIVES

Primary aldosteronism (PA), with relative kidney hyperfiltration leads to high ratio of cardiovascular events. Endothelial dysfunction and/or chronic inflammation play an important role in atherothrombosis, are present in early stages of renal insufficiency. This study investigated whether and to which extent endothelial dysfunction and inflammation were related to kidney marker of cystatin C (CysC) in PA.

## METHODS

Patients with clinical suspicion of primary aldosteronism (PA) were consecutively referred to Taiwan Primary Aldosteronism Investigation (TAIPAI) group clinic for evaluation, and enrolled in this study between Feb, 2007 and July, 2010 after confirmation of diagnosis. A propensity score-matched essential hypertension was selected for comparison in 2:1 manner. Cystatin C (CysC), pulse wave velocity (PWV), Framingham risk score and endothelial biomarkers, were estimated.

Adjusted spline of CysC associated with (A)proteinuria (ACR, albumin- creatinine ratio), (B) pulse wave velocity (PWV), (C) circulating EPC or (D) c- reactive protein (CRP) after multivariable adjustment, as plots by general additive model (age, sex, ARR, BMI, blood pressure, and preoperative serum potassium level).



## RESULTS

A total of 144 PA patients ( 59 male; age 50.3±13.3 years) enrolled within the study period (111 with adenoma and 33 with hyperplasia), and 72 patients with essential hypertension matched as control. Patients with PA had significantly higher PWV, CysC, CRP , soluble intercellular adhesion molecule - 1 (sICAM-1), and heavier proteinuria than the control group, while circulating EPC were higher among control group. Multivariate linear regression analysis found that CysC is strongly predictive of proteinuria, pulse wave velocity and circulating EPC, CRP and 10-year Framingham risk score independent of other conventional risk factors in patients with PA.

## CONCLUSIONS

Impaired endothelial function, assessed by using circulating biomarker levels and arterial stiffness has been observed in PA compared with EH. Our study identifies that CysC is a potential biomarker in patients with PA, associated with various cardiovascular risk factors.

These findings link CysC inextricably with inflammation, endothelial repairmen and arterial stiffness for the first time, add new significance to cardiovascular events in PA

## References

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