

RENAL PATHOLOGY. EXPERIMENTAL AND CLINICAL

SP110 REDUCED URINARY ALDOSTERONE IN PRE-ECLAMPSIA, SUPERIMPOSED PRE-ECLAMPSIA COMPARED TO STANDARD- AND HIGH-RISK PREGNANT WOMEN

Hiten D Mistry¹, Kate Bramham², Nicole Eisele³, Bernhard Dick⁴, Carolyn A Gill², Lucilla Poston², Lucy C Chappell² and Markus G Mohaupt⁴

¹University of Bern, Nephrology, Hypertension and Clinical Pharmacology, Berne, Switzerland, ²King's College London, Women's Health, London, United Kingdom,

³University of Bern, 1Department of Nephrology, Hypertension & Clinical Pharmacology, Bern, Switzerland, ⁴University of Bern, Department of Nephrology, Hypertension & Clinical Pharmacology, Bern, Switzerland

Introduction and Aims: Women with chronic kidney disease (CKD) and chronic hypertension (CHT) are at increased risk of superimposed pre-eclampsia (SPE) and associated adverse pregnancy outcomes. Diagnosis of SPE using blood pressure and proteinuria is of limited use because they may develop in women with CKD or CHT

without the condition. Inaccurate diagnosis may result in unnecessary iatrogenic preterm delivery. Plasma and urinary aldosterone concentrations are elevated in patients with CKD and CHT, but in established pre-eclampsia (PE) are suppressed. The aim of the study was to determine urinary aldosterone concentrations in women with CKD and/or CHT with and without SPE compared with normotensive controls (NC) and those with PE without CKD/CHT.

Methods: NC women (n=25), women with PE (n=22), CKD or CHT without SPE (n=25) and with SPE (n=21) were recruited from two tertiary antenatal clinics (mean \pm SD 38 \pm 3 weeks). Urinary tetrahydroaldosterone was measured by gas chromatography-mass spectrometry (GC-MS); creatinine was measured using a standard clinical laboratory assay for normalisation.

Results: A Kruskal Wallis test indicated significant differences between groups (P<0.0001). Aldosterone: creatinine ratios were significantly lower in both PE and SPE compared to the NC and CKD/CHT women (median [IQR], PE: 6.45 [2.95, 14.37]; SPE: 10.82 [5.42, 16.44]; NC: 13.75 [9.07, 29.80]; CKD/CHT: 24.18 [16.29, 37.88] μ g/mmol creatinine; P<0.05 for all).

Conclusions: Women with SPE have lower urinary aldosterone than women with CKD/CHT in keeping with women with PE without pre-existing disease, suggestive of similar pathophysiology. Further exploration of the predictive value of low urinary aldosterone for adverse pregnancy events in women with CKD and/or CHT and its role in cases of diagnostic uncertainty is required.