Identifying novel renal biomarkers to improve the clinical prediction of Preeclampsia (PE)

ISN — INTERNATIONAL SOCIETY OF NEPHROLOGY

Methods

MRI – analysed as part of the DAPHNE study

DAPHNE - prospective cohort of women at high-risk of developing PE undergoing serial, longitudinal cardio-placental MRI.

Regions of interest were drawn on T1/T2 maps around kidneys captured incidentally

Paired blood & urine samples analysed to assess biomarkers correlations to clinical outcomes

Results

- 44 participants
- 118 scans done

None with underlying CKD

18 – Normal outcomes

12 - Preeclampsia (PE)

14 – Chronic HTN (CHT)

↑ Creatinine than Normotensive (p=0.0021) & CHT (p=0.0095)

↑ T1 & T2 of Renal Cortex + Medullary T2 shortening

-Blood biomarkers correlate with changes

-correlations dependent on pregnancy outcome

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Conclusion: MRI biomarkers can help characterize renal injury in PE, showing increased cortical T2 (representing inflammation, oedema and fibrosis) – reflecting glomerular endotheliosis. Medullary T2 shortening may represent hypoxia. Larger prospective cohort studies are needed.

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