The impact of pre-eclampsia on kidney function a prospective study in Cape Town, South Africa

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Abstract

Background: Pre-eclampsia affects 10-15% of pregnancies. High-income countries have shown significant, sustained hypertension, heart disease, and kidney failure following pre- eclampsia. There is limited data on the long-term health sequelae in low and middle- income countries, this study aimed to evaluate the impact of pre-eclampsia in South Africa.

Methods: This observational cohort study was conducted at Groote Schuur Hospital, Cape Town, South Africa. Women with pre-eclampsia who attended the post-partum hypertension service (PPHS) from January 2020 to September 2023 were included. Demographics, genetic variation, clinical parameters, and patient and kidney survival were assessed.

Results: 195 women visited the PPHS. The mean age was 29.1±6.72 years, the median BMI was 31 kg/m2 (IQR 26-35) and 2/3rds (67%) underwent a caesarean section. Severe pre-eclampsia (with HELLP syndrome) occurred in 30% and acute kidney injury (AKI) in 35%. The majority (75.2%) were discharged on antihypertensives. The mean gestational age at delivery was 33±4.4 weeks. Persistent hypertension was observed in 38%, 45%, 38%, and 24% of women at 3, 6, 12, and 24 months postpartum, respectively. At 3, 12, and 24 months, 60%, 28%, and 33% had the combined outcome of an eGFR<90 ml/min/m2 and a UACR >3 mg/mmol. (Figure 1) The proportion of treated women with hypertension increased over two years, while the average blood pressure declined.

Conclusions: A third of women had AKI during pregnancy. Persistent hypertension was high and sustained microalbuminuria was significant. This underscores the importance of adequate postpartum management to prevent chronic kidney disease.