LAYMAN SUMMARY FOR RESEACH PROJECT REPORT SUBMITTED AS PARTIAL REQUIREMENT FOR COMPLETION OF MSc EPIDEMIOLOGY POSTGRADUATE, UTRECHT UNIVERSITY

Research topic

Prevalence and determinants of chronic kidney disease in women with hypertensive disorders in pregnancy in Nigeria: a cohort study

Background

Across all countries in the world, 5 – 10% of pregnant women develop hypertension (high blood pressure) for the first-time during pregnancy, usually starting after 20 weeks of pregnancy. Ideally, this hypertension should disappear within 6 – 8 weeks after delivery. These group of hypertensions are called Hypertensive Disorders in Pregnancy (HDP). In recent years, researchers in developed countries have found association between HDP and occurrence of kidney function disorders after delivery that lasts up to 3 months and more, which is called chronic kidney diseases (CKD). Sub-Saharan Africa is disproportionately affected by a high burden of both the HDP and CKD. Despite mounting evidence associating HDP with the development of CKD in developed setting, knowledge of this association from sub-Saharan Africa has not been established. This research determines if prior HDP is associated with development of CKD among sub-Saharan African women later in life.

Methods

410 women with HDPs and 78 women with normal pregnancy (not hypertensive) were recruited after delivery and followed-up at intervals (9 weeks, 6 months) up to one year after delivery. At each follow-up time, we collected blood from the two groups of women to measure serum creatinine from which we estimated the glomerular filtration rates(eGFR). As recommended, we defined CKD as "decreased eGFR<60mL/min/1.73m^2 lasting for three months or more. Prevalence of CKD at six months and one year after delivery was estimated. Logistic regression analyses were conducted to evaluate what factors determine whether a CKD develops (or not) in women that experience HDP during their pregnancies.

Results

We found that, within 24 hours of delivery, nine weeks and six months after delivery, women with HDP were more likely to have a decreased eGFR compared to women with normal pregnancies (12%, 5.7%, 4.3% versus 0%, 2% and 2.4%, respectively). The prevalence of CKD in HDP at six months and one year after was 6.1% and 7.6%, respectively, as opposed to zero prevalence in the women without hypertension for the corresponding periods. Proportions of decreased eGFR varied with HDP sub-types and intervening postpartum time since delivery, with pre-eclampsia/eclampsia (hypertension in conjunction with other hematological and metabolic problems) showing higher prevalence than chronic and gestational hypertension (hypertension without other hematological and metabolic problems). Only the age of the women independently determines whether a woman with HDP develop chronic kidney disease or not (odds of developing chronic disease increases by 1.18 for every 1-year addition in age).

Conclusion

In sub-Saharan Africa, as in other high-income countries, women with HDP are at increased risk of future chronic kidney disease, and women prior HDP are more likely to experience evidence of CKD over each period of the follow-up. We recommend that routine screening of women following HDP-complicated pregnancies should be part of a postpartum monitoring program to identify women at higher risk. Future research should report on both the eGFR and total urinary albumin excretion to enable detection of women at risk of future deterioration of renal function.