Incidence of Pregnancy-Associated Hypertension and Preeclampsia in a Cohort of Kenyan Women

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Synopsis

We describe the incidence of pregnancy-associated hypertension and preeclampsia in a cohort of women from Kenya attending antenatal care clinic.

Pregnancy-associated hypertension (PAH) and preeclampsia are leading causes of maternal and perinatal morbidity and mortality [1], associated with future development of cardiovascular and metabolic diseases in the mother, as well as risks for the baby such as poor growth and prematurity [2]. The exact cause is not fully understood. Preeclampsia is estimated to affect about 2-8% of pregnancies worldwide, with a 1.5 to 2-fold higher incidence among primigravid women, although the incidence of hypertensive disorders in pregnancy remains poorly understood in developing countries [3].

We investigated the incidence of hypertension and preeclampsia in a cohort of 1226 pregnant women in Kenya, who had blood pressures routinely checked during their antenatal care (ANC) visits using a digital sphygmomanometer, as well as urine dipstick (Hypoguard, Minneapolis, MN, USA) to assess for proteinuria. A total of 27 women (2.2%) met the definition of hypertension (defined as systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg) at least once during pregnancy and 133 (10.8%) had some degree of proteinuria at least once (64 with trace, 59 with 1 +, seven with 2 +, three with 3 + by urine dipstick). Of these, four (0.3%) met criteria for pre-eclampsia (defined as hypertension plus proteinuria of 1 + or more).

Women in our cohort had significantly lower incidence of preeclampsia than the estimated global incidence, but consistent with findings from a retrospective cohort of approximately 250,000 urban Zambian women attending ANC, which reported 2.1% with PAH, defined as eclampsia, pre-eclampsia, hypertension, or elevated blood pressure (> 140/80 mmHg) at delivery [4]. We were unable to disaggregate our cohort by gravidity, but these results suggest that pregnant women in Kenya and Zambia may be at lower risk for pre-eclampsia than those in countries where risk factors for hypertension such as obesity are on the rise. It is also possible that we underestimated the true incidence of pre-eclampsia, as our method was limited to use of blood pressure measurements and semi-quantification of proteinuria with urine dipsticks during ANC, and did not include measurements at delivery or in the inpatient wards, or pre-eclampsia diagnosed as hypertension in association with thrombocytopenia, impaired liver function, renal insufficiency, pulmonary edema, or new-onset cerebral or visual disturbances [2]. Further work is required to assess the variation in pre-eclampsia across different geographic locations and to better understand the risk factors in different populations.

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References


