Abstract #: 40

**Stroke and Preeclampsia/Eclampsia**

**Presenting Author:** Rebecca I Kalman MD  
**Presenting Author's Institution:** MGH - Boston, MA  
**Co-Authors:** Brian T Bateman MD - MGH - Boston, MA  
Rebecca D Minehart MD - MGH - Boston, MA  
Lisa R Leffert MD - MGH - Boston, MA

**Introduction:** The most common pregnancy specific risk factor for stroke is preeclampsia/eclampsia, with approximately 25-45% of pregnancy related strokes occurring in these patients (1). The purpose of this study is to analyze the occurrence of stroke in preeclamptic/eclamptic patients using nationwide administrative data and our institutional database.

**Methods:** From the Nationwide Inpatient Sample (NIS), which contains administrative data on approximately 20% of U.S. hospital admissions, we extracted all maternal admissions complicated by preeclampsia/eclampsia for the years 1997-2006 and within this group identified those with either hemorrhagic or ischemic stroke. We compared the rates of various demographic characteristics and comorbidities in admissions complicated by stroke to preeclamptic/eclamptic admissions without stroke using logistic regression to identify independent predictors of this complication. We then analyzed our own institutional experience from 1992-2009 with stroke in preeclampsia.

**Results:** There were an estimated 3545 preeclampsia/eclampsia-related strokes in the US during the study period, for a rate of 2.41 per 1,000 preeclamptic/eclamptic deliveries. The stroke etiologies were as follows: 27.7% acute ischemic stroke (AIS), 23.4% intracerebral hemorrhage (ICH), 12.7% subarachnoid hemorrhage (SAH), 3.7% subdural/epidural hemorrhage (SDH/EDH), with the balance having stroke without an etiology noted. Mortality rate varied by stroke etiology; for ICH it was 25.2%, SAH, 8.9%, SDH/EDH, 7.3% and AIS, 2.2%. Logistic regression revealed advancing age (odds ratio (OR) 1.6, 95% confidence interval (CI) 1.5-1.8), non-white race (OR 1.5, 95% CI 1.3-1.7), eclampsia (OR 24.0, 95% CI 20.6-28.0), chronic renal disease (OR 2.9, 95% CI 1.5-5.6), and coagulopathy (OR 6.3, 95% CI 4.7-8.4) to be independent risk factors for this complication.

Seven patients with the diagnoses of preeclampsia and stroke were identified at our institution during the time period studied. Stroke etiologies were ICH, SAH in the setting of posterior reversible leukoencephalopathy, SAH from aneurysm rupture, angiopathy resulting in diffuse ischemia, and hypertensive encephalopathy with infarct. Four strokes occurred post-partum and 3 occurred in the third trimester. All patients presented with systolic blood pressure above 150mmHg in the setting of stroke. Five presented with headache and 4 had seizures. Three patients underwent craniotomy. Two patients died and 2 had persistent neurologic deficits.

**Conclusions:** Stroke is a rare sequela of preeclampsia/eclampsia that confers significant morbidity and mortality. Risk factors for peripartum stroke include advancing age, non-white race, eclampsia, chronic renal disease, and coagulopathy. Although the etiologies of peripartum stroke are diverse, a common finding in our patient population is systolic BP > 150mmHg.