The Influence of Patient Characteristics on the Risk of Near-Miss Maternal Morbidity and Mortality

Abstract Type: Original Research
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Background: This investigation analyzed hospitalizations for delivery in order to identify maternal risk factors for delivery-related maternal death or near-miss morbidity. The combination of near-miss maternal morbidity with mortality increases power to examine pregnancy-related risk when compared with an exclusive focus on maternal death. (1)

Methods: We performed a cross-sectional study to identify cases of death or near-miss morbidity from hospitalizations for delivery in the 2003-2006 Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project. We defined near-miss morbidity as a hospitalization complicated by at least one ICD-9 CM diagnosis code designating end-organ injury in combination with a length of stay ≥ 7 days or discharge to a medical facility. Logistic regression was used to examine the effect of maternal characteristics on rates of near-miss maternal morbidity/mortality.

Results: Approximately 1.3 per 1000 hospitalizations was complicated by near-miss morbidity or mortality (95% confidence interval [CI] 1.3-1.4). Risk was increased with advancing maternal age (age 35-39 years vs. 20-34 years adjusted odds ratio [aOR] 1.6, 95% CI 1.5-1.8; age ≥40 years vs. 20-34 years aOR 2.1, 95% CI 1.8-2.4), for black women compared with white women (aOR 2.4, 95% CI 2.2-2.7), and in women with certain pre-existing medical conditions. The highest rates were noted among women with pulmonary hypertension (98.0 cases per 1,000 deliveries; aOR 12.0, 95% CI 7.6-18.9), malignancy (23.4 per 1,000; aOR 18.4, 95% CI 12.2-27.8), systemic lupus erythematosus (21.1 per 1,000; aOR 10.0, 95% CI 8.5-11.8), chronic renal disease (19.3 per 1,000; aOR 6.6, 95% CI 5.1-8.4), sickle cell disease (15.5 per 1,000; aOR 7.0, 95% CI 6.1-7.1), and placenta previa (12.3 per 1,000; aOR 10.0, 95% CI 8.5-11.8).

Conclusion: Risk for near-miss maternal morbidity or mortality is substantially increased among an identifiable subset of pregnant women. Antepartum interdisciplinary planning and delivery in centers with the capacity to rapidly escalate care may improve maternal outcomes for this high risk group.

(1) Say L, BMC Reproductive Health 2004;1:3.