

Hospital-based Predictors of Epidural and Spinal Anesthesia Use: A Population-based Analysis of Washington State

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Background While much research has been done on individual predictors of epidural use, little is known about the influence of hospital-based factors on the use of epidural and spinal anesthesia. We examined the risk of epidural and spinal anesthesia use across perinatal levels of care, teaching hospital status, and ownership of hospital in Washington State.

Methods We performed a case-control study using 2003-2004 Washington State birth certificate data to examine the association between epidural use and hospital level, teaching status, and ownership. We examined 30,031 women with term pregnancies who delivered in cephalic presentation and received an epidural or spinal in labor at one of the obstetric hospitals in Washington State, compared to an equal number of controls. A multivariate logistic regression model with clustered robust estimators was used to estimate relative odds ratios and 95% confidence intervals.

Results Women who delivered at a secondary perinatal level hospital had an approximate 2-fold increased odds in receiving an epidural (adjusted odds ratio (aOR) 1.9 [95% CI 1.3, 2.9]. Likewise, women at tertiary perinatal level hospitals had a greater than 2-fold increased odds of epidural (aOR 2.4 [95% CI 1.5, 3.8]), when adjusted for maternal age, education, delivery payer, and labor induction. Women who delivered at military hospitals had a 2-fold increased odds of receiving an epidural above women who delivered at public hospitals (aOR 2.3 [CI 1.4, 3.9]). We found no association between epidural use and teaching status of hospital.

Conclusions Perinatal level of hospital is associated with epidural and spinal anesthesia use. Further research is needed to clarify the underlying causes for these hospital-level differences.

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