

Anesthesia for Cesarean Section at a Tertiary Hospital in Accra, Ghana: The Results of an International Collaboration

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Introduction: In Africa, the use of general anesthesia for Cesarean section (CS) may account for as many as 5-7 % of hospital-based maternal deaths, occurring in both healthy and medically compromised patients.¹⁻⁴ Unfortunately, many African anesthesia providers may not have knowledge or training utilizing regional anesthesia for CS. In January 2007, the Ghana Health Service and Kybele (www.kybeleworldwide.org) began a 5 year collaboration at Ridge, a tertiary hospital in Accra, to improve childbirth safety; this was following a preliminary site visit in January 2006. As part of the collaboration, type of anesthesia for CS was assessed and an educational program (EP) was designed. The purpose of this study was to evaluate the effectiveness of the EP in reducing the use of general anesthesia for CS.

Methods: Kybele was granted institutional permission to develop an EP. International medical teams traveled to Ghana 7 times in 2006-2008, to provide 1-2 weeks of on-site training and follow-up. Ghanaian anesthesia providers received didactic and practical training in the use of spinal anesthesia for CS including, sterile preparation, needle selection, interspace identification, local anesthetic dosage, sensory block assessment and hemodynamic monitoring. A triage system based on the 30 min rule was also introduced to reduce delay in initiating surgery for maternal or fetal distress. Data was collected for the type of anesthesia for CS and maternal mortality, but not for delay. Statistical analysis was performed with Chi-square ($p < 0.05$).

Results: In 2005, the use of regional anesthesia for CS at Ridge Hospital was 1%. Following the EP, the use of regional anesthesia for CS significantly increased (Table). During the same time, there was a large increase in the number of CS performed. In 2008, there was a decrease in maternal mortality.

Year	# CS	CS rate (%)	Regional Anesthesia (%)	Maternal deaths /100,000 live births
2006	1555	32	6	479
2007	2234	37	48*	481
2008	2537	34	78*	392

* $P < 0.001$ for 2007 and 2008 when compared to baseline 2006 data.

Conclusion: The reduction in maternal mortality at Ridge Hospital is encouraging and may be related to an increase in the use of regional anesthesia for CS. It is more likely, however, that mortality reduction is based on multiple factors associated with the EP.

References: ¹Acta Anaesthesiol Scand 2006;50:206-10. ²IJOA 2002;11:77-80. ³IJOA 1998;7:237-41. ⁴BMJ 2003;327:587-90.

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