

## TRENDS IN CAESAREAN SECTION AT CALABAR GENERAL HOSPITAL, CROSS RIVER STATE, NIGERIA

Osonwa O. K.<sup>1</sup>, Eko J. E.<sup>2</sup>, Ekeng P. E.<sup>3</sup>

<sup>1</sup>Department of Sociology, Faculty of Social Sciences,  
University of Calabar, Calabar, Nigeria.

<sup>2</sup>Department of Public Health, Faculty of Allied Sciences,  
University of Calabar, Calabar, Nigeria.

<sup>3</sup>University of Calabar Teaching Hospital, Calabar, Cross River State, Nigeria

---

**ABSTRACT:** *There are wide global variations in the prevalence of caesarean section in developed, developing and underdeveloped countries. The objective of this study was to determine the trends in caesarean section at Calabar General Hospital, Cross River State. This paper used a retrospective review of clinical records at the maternity units of Calabar General Hospital from 2009 to 2013. Findings from this study showed that Caesarean section rate ranged from 3.85% in 2009 to 7.38% in 2013 with an average caesarean section rate of 5.39%. Based on available data, elective caesarean section progressed substantially from 17.2% in 2009 and slightly declined to 15.3% in 2010, then increased again from 22.5% in 2011, 29.6% in 2012 to 31.0% in 2013. Emergency caesarean section on the other hand increased progressively from 82.8% in 2009 to 84.7% in 2010 then declined from 77.5% in 2011, 70.4% in 2012 to 69.0% in 2013. In conclusion improvement of obstetric services should be a priority in all health care settings.*

**KEYWORDS:** Ceasearan section, Trends, Pregnant women, Calabar General Hospital

---

### INTRODUCTION

There are wide global variations in the prevalence of caesarean section. The prevalence of CS rates is highest in the Caribbean, Latin America and Asian countries which share CS rate of 26% whereas CS rate is low in South Asia and Sub-Saharan Africa (Stanton and Holtz, 2006). Twenty-five of the 29 countries in Sub-Saharan Africa have rates of 5% or lower. Countries such as China, South Korea, Brazil, Iran, Chile and Dominican Republic have the highest CS rate ranging from 30-40% (Stanton and Holtz, 2006). As at 2008, the CS rate was 24% in the UK. In Canada and Ireland, the CS rate was 26% in 2005-2006 and 26.1% in 2009 respectively (Bucklin, Hawkins, Anderson & Ullrich, 2005). In the United States of America, CS rate varies from 23% to 40%, Campania (60%) as at 2008, Rome (44%) and Australia 31% as at 2007.

In developed countries such as in U. S., CS was reported to be the most performed procedure as at 2011 especially for people who were between the age bracket of 18-44 years old (Pfuntner, Wier & Stocks, 2013). In the U. S., CS rate rise considerably to 60% from 1996 to 2009 while in 2010 it fell slightly to 32.8%. Caesarean section rate has been reported highest in China at 46% as of 2008 (WHO, 2010). In 2010, WHO global survey carried out in 24 countries showed that most African countries recorded an average CS rate of 9% (Lumbiganon et al, 2010). Previous studies also indicated that CS rates considerably range from 0.8%-17% in most African countries (Wylie and Mirza, 2008; Stanton, Dubourg, De Brouwere, Pujades and Ronsmans, 2005). A recent study carried out in Cairo university hospital (OGCUH) and

Almatariya hospital (AMH) indicated that CS rate was at 37.8% and 36.5% respectively (Ebrashy et al, 2011).

In Nigeria, CS rate varies from 3% to 21% with 9.4% reported in Ebonyi, 9.9% in Sokoto, 10.3% in Enugu, 10.5% in Makurdi, 11.4% in Zaria, 15.8% in Jos, 19.8 in Calabar and 20.3% in Birnin-Kebbi (Megafu & Nweke, 2002; Iklaki, Ekabua, Agan, Ekanem & Asuquo, 2005; Swende, Agida & Jogo, 2007; Sule & Matawal, 2003; Mutahir, Daru & Ujah, 2005; Nwobodo & Wara, 2004; Nwobodo, Isah & Panti, 2011). According to Hodnett & Henderson (2008) continuity in care and provision of standardized health services has been reported to significantly reduce cesarean delivery. Most emergency cesarean sections are preferably performed during the day than at night (Goldstick, Weissman and Drugan, 2003).

### **Objective of the study**

The objective of the study to determine the trends in caesarean section at Calabar General Hospital, Cross River State, Nigeria.

### **METHODS**

A five-year retrospective review of clinical records obtained at the maternity unit was carried out to check the trends in cesarean delivery from 2009 to 2013. Total number of deliveries, total number of elective CS and total number of emergency CS were key variables considered for the review.

### **RESULTS**

#### **Prevalence of Caesarean section among pregnant women from 2009 to 2013**

Based on available data, in 2009, out of 1,045 deliveries, 58 (5.55%) pregnant women delivered through caesarean section. While 10 (17.2%) out of the 58 pregnant women that delivered through CS subscribed to elective CS, 48 (82.8%) pregnant women delivered through emergency type of CS.

In 2010, out of 1,771 deliveries, 85 (4.80%) pregnant women delivered through CS. A larger proportion of pregnant women 72(84.7%) delivered through emergency CS while a lesser proportion 13(15.3%) subscribed to elective CS.

In 2011, out of 2,651 deliveries, about 102 (3.85%) delivered through CS. While 79 (77.5%) pregnant women delivered through emergency CS, 23(22.5%) delivered by elective CS.

In 2012, out of 3,010 deliveries, one hundred and sixty-two (5.38%) pregnant women delivered through CS. About 114(70.4%) pregnant women delivered through emergency CS while 48 (29.6%) through elective CS.

In 2013, the total number of deliveries increased slightly to 3,318 out of which 245 (7.38%) of pregnant women delivered through CS. About 169 (69.0%) delivered by emergency CS while the remaining 76 (31.0%) pregnant women delivered through elective CS (Table 1).

**TABLE 1: Trends of caesarean section among pregnant women at Calabar General Hospital (2009-2013)**

| Years | Total number of deliveries | Caesarean section (%) | Elective Caesarean section (%) | Emergency Caesarean section (%) |
|-------|----------------------------|-----------------------|--------------------------------|---------------------------------|
| 2009  | 1, 045                     | 58 (5.55)             | 10 (17.2)                      | 48 (82.8)                       |
| 2010  | 1, 771                     | 85 (4.80)             | 13 (15.3)                      | 72 (84.7)                       |
| 2011  | 2, 651                     | 102 (3.85)            | 23 (22.5)                      | 79 (77.5)                       |
| 2012  | 3, 010                     | 162 (5.38)            | 48 (29.6)                      | 114 (70.4)                      |
| 2013  | 3, 318                     | 245 (7.38)            | 76 (31.0)                      | 169 (69.0)                      |

Source: Records Department, Calabar General Hospital

## DISCUSSION

A retrospective review of clinical records from 2009 to 2013 revealed that CS rate ranges from 3.85% to 7.38% with an average CS rate of 5.39%. This rate is far lower than 16.6% reported in Ebonyi, 10.5% reported in Makurdi, 10.4% reported in Akwa, 9.1% reported in Ilorin, 34.6% reported in Lagos, 18% reported in Jos, 11.8% reported in Maiduguri and 19.8% reported in Calabar (Sunday-Adeoye & Kalu, 2011; Swende, Agida & Jogo, 2007; Ikeako, Nwajaku & Ezegwui, 2009; Ijawiya & Aboyeji, 2011; Ezechi, Nwokoro, Kalu, Njokanma & Okeke, 2002; Alsien, Lawson & Adebayo, 2002; Geidam, Audu, Kawuwa & Obed 2009; Iklaki, Ekabua, Agan, Ekanem & Asuquo, 2005 respectively). One major factor that may influence the difference in the prevalence rate of CS is the total number of deliveries in every 12 calendar month. Others factors such as place of cesarean delivery (Government or private health facilities), study setting (urban or rural), sample size, level of awareness on CS and cost may substantially account for the differences in prevalence of CS rate.

Based on the five-year retrospective review, elective CS progress substantially from 2009 (17.2%) but drops slightly in 2010 (5.3%) and then increase again from 2011 (22.5%), 2012 (29.6%) to 2013 (31.0%). Similarly, emergency CS increases progressively from 2009 (82.8%) to 2010 (84.7%) and drops slightly from 2011 (77.5%), 2012 (70.4%) to 2013 (69.0%). This report is comparable with a retrospective study carried out in Makurdi where the rate of elective caesarean section increased from 10.3% in 2004 to 22.8% in 2006 of all CS (Swende et al., 2007). Another retrospective study carried out in Sokoto, Nigeria, reported that the rate of elective CS increased from 1.7% in 2002 to 3.2% in 2007 (Nwobodo, Isah & Panti, 2011). Similarly, emergency CS also reported high in other studies such as 80% in Calabar and 78.2% in Sokoto and 73.4% in Obudu of Cross River State (Iklaki et al., 2005; Nwobodo, Isah & Panti, 2011; Utoo & Utoo, 2013 respectively). From available data, it is obvious that most women undergo emergency CS than elective CS. Reasons may be attributed to the indications of CS and doctor's influence in decision making which most times overrides the opinion of the patient involved. Consequently, these factors usually influence the type of CS to be carried out. On the other hand, based on some erroneous and myths/beliefs about CS, most women would not subscribe to elective CS.

## CONCLUSION

Improved obstetric practices are pivotal in ameliorating maternal, infant and neonatal morbidity and mortality especially in poor and disadvantaged countries. Computed data showed that there is an increased trend of CS from 5.55% in 2009 to 7.38% in 2013. It is therefore recommended that CS should be incorporated as one of the core components of maternal educational programmes in all ANC outlets. This is to widen the knowledge level of clients on the importance of undergoing cesarean delivery especially during emergency obstetric complications.

## REFERENCES

- Alsien AO, Lawson JO, Adebayo AA. (2002): A five-year appraisal of caesarean section in a northern Nigerian University Teaching Hospital. *Nigerian Postgraduate Medical Journal*. 9: 146-50
- Bucklin B. A, Hawkins J. L, Anderson J. R, Ullrich F. A (2005). "Obstetric anesthesia workforce survey: twenty-year update". *Anesthesiology* 103(3): 645–53
- Ebrashy A, Kassab A, Nada A, Saleh WF, Soliman A (2011): Caesarean section in A university and General Tertiary Hospitals in Cairo; Egypt: Rates, Indications and limits; *Kasr Al-Aini Journal of Obstetrics and Gynecology*; 2(1):20-26.
- Ezechi OC, Nwokoro CA, Kalu BKE, Njokanma FO, Okeke GCE. (2002): Caesarean morbidity and mortality in a private hospital in Lagos, Nigeria. *Tropical Journal of Obstetrics and Gynaecology*; 19: 97-100
- Geidam AD, Audu BM, Kawuwa BM, Obed JY. (2009): Rising trends and indications of caesarean section at the University of Maiduguri Teaching Hospital, Nigeria. *Annals of African Medicine*. 8(2): 127-132
- Goldstick O, Weissman A, Drugan A (2003). "The circadian rhythm of "urgent" operative deliveries. *The Israel Medical Association Journal*; 5 (8): 564–6.
- Hodnett ED; Henderson, Sonja (2008). "WITHDRAWN: Continuity of caregivers for care during pregnancy and childbirth". In Henderson, Sonja. Cochrane Database Systemic Review (4): CD000062.
- Ijawiya MA, Aboyeji AA. (2011): Caesarean Delivery: The trend over a ten-year period at Ilorin, Nigeria. *Nigerian Journal of Surgical Research*; 3(1): 11-18
- Ikeako LC, Nwajaku L, Ezegwui HU. (2009): Caesarean section in a secondary health hospital in Awka, Nigeria. *Nigerian Medical Journal*, 50(3): 64-67
- IKlaki C. U., Ekabua J. E., Agan T. U., Ekanem E. L., Asuquo E. E. (2005): Current trends in caesarean section in University of Calabar Teaching Hospital, Calabar Nigeria. *Mary Slessor Journal of Medicine*; 5(1):41-45
- Lumbiganon, P., Laopaiboon, M., Gulmezoglu, A.M., Souza, J.P., Taneepanichskul, S., Ruyan, P., Attygalle, D.E., Shrestha, N., Mori, R., Nguyen, D.H., (2010) Method of delivery and pregnancy outcomes in Asia: The WHO global survey on maternal and perinatal health 2007-2008. *Lancet*; 375(23): 490-499.
- Megafu U, Nweke PC. (2002): Maternal mortality from caesarean section. *Tropical Journal of Obstetrics and Gynaecology*;9:1-4.
- Mutihir J. T., Daru P. H., Ujah I. O. (2005): Elective caesarean section at Jos University Teaching Hospital. *Tropical Journal of Obstetrics and Gynaecology*; 22(1):39-41
- Nwobodo E. I., Isah A. Y., Panti A. (2011): Elective cesarean section in a tertiary hospital in Sokoto, North Western Nigeria; *Nigerian Medical Journal*.; 52(4):263-265

- Nwobodo E. I., Wara H. L. (2004): High caesarean section rate at Federal Medical Centre Birnin-Kebbi: Real or apparent? *Nigerian Medical Practitioners*; 46(2):39-40
- Pfuntner A., Wier L.M., Stocks C. (2013): Most Frequent Procedures Performed in U.S. Hospitals, 2011. HCUP Statistical Brief #165. Agency for Healthcare Research and Quality, Rockville, MD
- Stanton C. K., and Holtz S. A. (2006): Levels and trends in cesarean birth in the developing world. *Studies in Family Planning*; 37(1):41–48.
- Stanton, C.K., Dubourg, D., De Brouwere, V., Pujades, M. and Ronsmans, C. (2005): Reliability of data on caesarean sections in developing countries. *Bulletin of the World Health Organization*; 83(2): 449-455.
- Sule S. T, Matawal B. I. (2003): Comparisons of indications for caesarean section in Zaria, Nigeria: 1855 and 1995. *Annals of African Medicine*; 2(1):77-9.
- Sunday-Adeoye I., Kalu C. A. (2011): Pregnant Nigerian women’s view of cesarean section. *Nigeria Journal of Clinical Practice*; 14(3):276-279
- Swende T. Z., Agida E. T., Jogo A. A. (2007): Elective caesarean section at the Federal Medical Centre Makurdi, North-central Nigeria. *Nigerian Journal of Medicine*;16 (3):372-374
- Utoo B, Utoo. P. (2013): Primary Caesarean Section And Fetal Outcome Amongst Nulliparous Women At A Health Facility In Southern Nigeria. *The Internet Journal of Gynecology and Obstetrics*; 17( 1): 23-46
- WHO (2010) Trends in Maternal Mortality: 1990 to 2008. Geneva: World Health Organization.
- Wylie, B.J. and Mirza, F.G. (2008) Cesarean delivery in the developing world. *Clinics in Perinatology*; 35(2):571- 582.