

Newborn Care in the Delivering Room: An Observational Study from Nigerian

I.O. George, H.A.A. Ugboma and T.K. Nyengidiki
Departments of Paediatrics, Obstetrics and Gynaecology,
University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria

Abstract: Care of the newborn is an aspect of child survival that has received limited attention. The situation is tragic especially as most of these babies are dying due to mainly preventable causes such as birth asphyxia. The aim of this study therefore is to determine care given to the newborn at the delivery room of the facility. This was a prospective study carried out in the Labour Ward of the University of Port Harcourt Teaching Hospital (UPTH) Nigeria >2 month period (1st June to 30th July 2011). Direct observation during delivery was utilized using a checklist to assess the quality of care provided during delivery. Practices were graded as not done, badly done and well done. Information obtained included umbilical cord clamping, contact with mother, initiation of breastfeeding, maintenance of cleanliness and resuscitation. Analysis was done using Epi-Info 6 and SPSS 15.0 computer statistical software packages. Descriptive statistics were computed for all relevant data. A total of 90 deliveries were observed in the labour ward of the facility during the study period. Of these, 32 (35.6%) were primiparous and 58 were multiparous. Ambu bags and suction machines were prepared before delivery in 18 (20%) and 44 (48.9%), respectively. All the newborns were kept in a clean place immediately after delivery. Umbilical cord clamping was done in <3 min in 78 (86.7%) of the deliveries. Immediate skin to skin contact was not done in 66 (73.3%) of the deliveries. Mother and baby were kept together in the labour room in 43 (47.8%) of the deliveries. Sixty seven mothers did not initiate breast feeding within 30 min. High standard of hygiene and thermal control measures were noted however, the emergency preparedness and complication readiness practices were substandard. There is need to educate the midwifery team on evidence based newborn practices to improve neonatal outcome.

Key words: Care, newborn, delivery room, mid wifery, breast feeding, Nigeria

INTRODUCTION

Newborn care is designed to improve health of newborns through a minimum set of interventions that should be made available for all births (WHO, 1996, 2009). This is based on simple principles of resuscitation of newborn with asphyxia, prevention of infection, thermal protection, early and exclusive breastfeeding, care of low-birth weight babies and identification and appropriate referral of sick neonates (Costello and Manandhar, 1998; WHO/SEAR, 2004). It is documented that practice of cleanliness that is hand washing, clean delivery surface and care of the umbilical cord is associated with a reduction in perinatal morbidity and mortality (Bhutta *et al.*, 2005).

Each year in Africa 30 million women become pregnant and about 250,000 of them die from pregnancy related causes (UNICEF, 2008). Approximately, 280,000

babies die of birth asphyxia soon after birth (UNICEF, 2008). These figures are closely related. Essential care at birth and immediately thereafter would save the lives of many babies and prevent countless complications. This is however, fundamental to reaching Millennium Development Goal (MDG) 4 for child survival.

Hitherto, care of the newborn is an aspect of child survival that has received limited attention. The situation is tragic especially as most of these babies are dying due to mainly preventable causes such as birth asphyxia, infections and prematurity. The present circumstance informs that if we do not re-strategize to arrest the current trend and substantially reduce neonatal mortality, Nigeria will not attain Millennium Development Goal 4 for child survival. The aim of this study therefore is to determine care given to the newborn at the delivery room of the facility. Information obtained will be used to improve facility level care of newborns in Nigeria.

MATERIALS AND METHODS

This study was carried out in the Labour Ward of the University of Port Harcourt Teaching Hospital (UPTH) Nigeria >2 month period (1st June to 30th July 2011).

The Teaching Hospital established in 1979 is the only tertiary hospital located in the metropolis of Port Harcourt, the capital of Rivers State of Nigeria. It is a 700 bedded hospital and serves as a general/referral centre for patients resident in Rivers State and neighboring states. It was designated a Baby Friendly Hospital in 1993 and has an annual delivery rate of approximately 3,500. It sets the pace for optimal medical practice in the state.

Direct observation during delivery by observers trained in the care of the new born with emphasis on standard practices was done. A checklist was used to assess the quality of care provided during delivery. Practices were graded not done, badly done and well done. Information obtained included umbilical cord clamping timing, contact with mother, initiation of breastfeeding, maintenance of cleanliness and resuscitation.

Analysis was done using Epi-Info 6 and SPSS 15.0 computer statistical software packages. Descriptive statistics were computed for all relevant data.

RESULTS AND DISCUSSION

There were a total of 90 deliveries were observed in the labour ward of the facility during the study period. Of these, 32 (35.6%) were primiparous and 58 were multiparous. Ambu bags and suction machines were prepared before delivery in 18 (20%) and 44 (48.9%), respectively. All new born were kept in a clean place immediately after delivery. Umbilical cord clamping was done in <3 min in 78 (86.7%) deliveries. Immediate skin to skin contact was not done in 66 (73.3%) of the deliveries (Table 1). Weight and length measurements were done in the delivery room in all the cases. Mother and baby were kept together in the labour room in 43 (47.8%) of the deliveries. In 23 (25.6%) of the deliveries breast feeding was initiated within 30 min of delivery while 67 (74.4%) mothers did not initiate breast feeding within 30 min (Table 1).

Table 1: Newborn care at delivery in the labour ward

Factors	Not done (%)	Well done (%)
Newborn kept on a clean surface	-	90 (100.0)
Suctioned device prepared	46 (51.1)	44 (48.9)
Neonatal ambu bag/mask prepared	60 (67.7)	30 (32.3)
Neonatal emergency tray prepared	60 (67.7)	30 (32.3)
Newborn thoroughly dried soon after birth	-	90 (100.0)
Newborn wrapped in a dry towel	5 (5.6)	85 (94.4)
Immediate skin-to-skin contact	66 (73.3)	24 (26.7)
Mother and baby kept together in labour room	47 (52.2)	43 (47.8)
Initiation of breast feeding within 30 min	67 (74.4)	23 (25.6)

The final product of a birth process is largely dependent on the kind of a care offered to the newborn during the birth process and the major causes of perinatal mortality namely birth asphyxia, hypothermia and infection can be reduced by proper immediate care of the newborn (Darmstadt *et al.*, 2005).

Before delivery it is important to check and certify that the requisite equipment are functional such as suction machine, radiant heater, suitable delivery room ambient temperature and that pre-warmed towels are available. The mother’s case notes should be checked for any relevant information in particular any antenatal diagnosis made, any relevant maternal condition or any risk factors for infection. Surgical gloves should be worn over clean hands to protect the baby and the attending professional (WHO, 2002).

Resuscitation of newborn would occur in 10% of the >100 million infants delivered globally with the aim of reducing the incidence of birth asphyxia (Kattwinkel *et al.*, 2010). In this study about half of the deliveries undertaken were not prepared for neonatal resuscitation as evident by the absence of rudimentary resuscitative apparatus such as suction machine and ambu bag. This situation is further compounded by the lack of the neonatal emergency tray in 67.7% of the deliveries. Emergency preparedness and complication readiness have been shown to reduce the morbidity and mortality associated with maternal and newborn care and in the absence of these, preventable morbidities would be increased (Jukkala and Henly, 2009).

After the infant is delivered and dried with a clean dry cloth, a fully reactive infant need to be placed prone on the maternal abdomen and covered with a warm and dry cloth. This was however noted not done in all the cases in this study. Immediate and uninterrupted skin-to-skin contact between the mother and infant is necessary for newborn adaptation after birth, especially as a protection against hypothermia and hypoglycemia. Mazurek *et al.* (1999) found lower glucose in babies swaddled and lying beside mother as against those that have skin-skin contact with mother.

It is important to note that routine delivery room practices that separate the mother and infant (such as cleaning and weighing the infant) have been shown to negatively impact on early initiation of breastfeeding (Nakao *et al.*, 2008) as continuous, uninterrupted skin to skin contact may optimize the baby’s success at the first breastfeed (Righard and Alade, 1990). During this period together, health care staff are expected to monitor the condition of both mother and newborn and provide unobtrusive breastfeeding assistance if necessary using an approach that takes into account maternal comfort and her desire for modesty. In this study, the early initiation of breastfeeding was observed in 32.2% of the deliveries

which is <47.1% reported in an earlier Brazilian study (Vieira *et al.*, 2010). The early initiation of breastfeeding is important in reducing the incidence of primary postpartum haemorrhage secondary to uterine atony and retained placenta (Righard and Alade, 1990) and is associated with a longer duration of exclusive breastfeeding in infancy (Moore *et al.*, 2007).

The suckling reflex stimulates maternal oxytocin secretion (Matthiesen *et al.*, 2001) which promoting uterine contractions (Chua *et al.*, 1994). Thus, this practice of newborn care should be encouraged in low resource setting where the requisite skills for manual removal of placenta and oxytocics are lacking. There is therefore, need to rejuvenate the practice of early initiation of breastfeeding.

In this study umbilical cord clamping was done in <3 min in majority (86.7%) of cases. The optimal time to clamp the umbilical cord for all infants regardless of gestational age or fetal weight is when the circulation in the cord has ceased and the cord is flat and pulse less approximately 3 min or more after birth (Rheenen and Brabin, 2007). Clamping the umbilical cord immediately (within the 1st 10-15 sec after delivery) prevents the newborn from receiving adequate blood volume and consequently sufficient iron stores. Immediate cord clamping has been shown to increase the incidence of iron deficiency and anemia during the first half of infancy (Hutton and Hassan, 2007) with lower birth weight infants and infants born to iron deficient mothers being at particular risk (Chaparro *et al.*, 2006).

Most newborn babies are most sensitive to hypothermia during the stabilization period in the 1st 6-12 h after birth because they have poor thermal insulation, small body mass and also have the inability to change posture in response to thermal stress (Kumar *et al.*, 2009). Hypothermia can threaten newborns with delayed foetal to newborn circulatory adjustment, acidosis and hyaline membrane disease (Kumar *et al.*, 2009). Thus, all measures need to be taken to prevent any thermal loss the practice of thermal control for the newborn in this study was noticed to be very good as most of the babies were wrapped in cleaned clothing while maintaining an ambient temperature of 29°C in the labour room. However, the benefits of this practice were mitigated by late initiation of breastfeeding and delayed skin to skin contact which would have further improved the outcome of good thermal control.

The practice of sustained of skin to skin contact between mother and the newborn initiates colonization of the newborn with maternal flora as against nosocomial colonization, facilitates olfactory learning and sustainable breastfeeding (Moore *et al.*, 2007). This beneficial act was noticed to be poorly practised in the study as 73.3% of the deliveries had no skin to skin contact. Traditional

practices and beliefs rather than evidence based practices have found their way into the hospital resulting in substandard care for the newborn. This practice is based on the thinking that the newborn is contaminated with vernix caesosa which is actually protective against bacterial colonization and hypothermia (Moore *et al.*, 2007).

CONCLUSION

The newborn practice standards observed during this study as regard resuscitation, cord clamping, skin to skin contact and early breastfeeding initiation are noticed to be poor hence exposing the newborns to higher risk of morbidity. This is further compounded by the poor practice of emergency preparedness and complication readiness. The cumulative gains of good thermal control will be lost if other aspects of care are not standardized. There is thus need to step up behavioral change communication efforts by educating the midwifery team on modern evidence based practices aimed at improving early newborn care.

REFERENCES

- Bhutta, Z.A., G.L. Darmstadt, B.S. Hasan and R.A Haws, 2005. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: A review of the evidence. *Pediatrics*, 115: 519-617.
- Chaparro, C.M., L.M. Neufeld, G.T. Alavez, R.E.L. Cedillo and K.G. Dewey, 2006. Effect of timing of umbilical cord clamping on iron status in Mexican infants: A randomised controlled trial. *Lancet*, 367: 1997-2004.
- Chua, S., S. Arulkumaran, I. Lim, N. Selamat and S.S. Ratnam, 1994. Influence of breastfeeding and nipple stimulation on postpartum uterine activity. *Br. J. Obstet. Gynaecol.*, 101: 804-805.
- Costello, A. and D. Manandhar, 1998. *Improving Newborn Health in Developing Countries*. Imperial College Press, London.
- Darmstadt, G.L., Z.A. Bhutta, S. Cousens, T. Adam, N. Walker and L. de Bemis, Lancet Neonatal Survival Steering Team, 2005. Evidence-based, cost-effective interventions: How many newborn babies can we save? *Lancet*, 365: 977-988.
- Hutton, E.K. and E.S. Hassan, 2007. Late vs. early clamping of the umbilical cord in full-term neonates: Systematic review and meta-analysis of controlled trials. *J. Anim. Med. Assoc.*, 297: 1241-1252.

- Jukkala, A.M. and S.J. Henly, 2009. Provider readiness for neonatal resuscitation in rural hospitals. *J. Obstet. Gynecol. Neonatal. Nurs.*, 38: 443-443.
- Kattwinkel, J., J.M. Perlman, K. Aziz, C. Colby, K. Fairchild and J. Gallagher, 2010. Neonatal resuscitation: American Heart Association Guidelines for cardiopulmonary resuscitation and Emergency Cardiovascular Care. *Circulation*, 122: S909-S909.
- Kumar, V., J.C. Shearer, A. Kumar and G.L. Darmstadt, 2009. Neonatal hypothermia in low resource settings: A review. *J. Perinatol.*, 29: 401-412.
- Matthiesen, A.S., A.B. Ransjo-Arvidson, E. Nissen and K. Uvnas-Moberg, 2001. Postpartum maternal oxytocin release by newborns: Effects of infant hand massage and sucking. *Birth*, 28: 13-19.
- Mazurek, T., K. Mikiel-Kostyra, J. Mazur, P. Wieczorek, B. Radwanska and L. Pachuta-Wegier, 1999. Influence of immediate newborn care on infant adaptation to the environment. *Med. Wieku. Rozwoj*, 3: 215-224.
- Moore, E.R., G.C. Anderson and N. Bergman, 2007. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst. Rev.*, 10.1002/14651858.CD003519.pub2 .
- Nakao, Y., K. Moji, S. Honda and K. Oishi, 2008. Initiation of breastfeeding within 120 minutes after birth is associated with breastfeeding at four months among Japanese women: A self-administered questionnaire survey. *Int. Breastfeed J.*, 3: 1-1.
- Rheenen, van P. and B.J. Brabin, 2007. A practical approach to timing cord clamping in resource poor settings. *Biol. Med. J.*, 333: 954-958.
- Righard, L. and M.O. Alade, 1990. Effect of delivery room routines on success of first breast-feed. *Lancet*, 336: 1105-1107.
- UNICEF, 2008. *The State of the World's Children 2009: Maternal and Newborn Health*. UNICEF, New York, ISBN: 978-92-806-4318-3, Pages 158.
- Vieira, T.O., G.O. Vieira, E.R.J. Giugliani, C.M.C. Mendes, C.C. Martins and L.R. Silva, 2010. Determinants of breastfeeding initiation within the first hour of life in a Brazilian population: Cross-sectional study. *Biol. Med. Chem. Public Health*, 10: 760-760.
- WHO, 1996. *Essential newborn care Report of a Technical Working Group*. (WHO/FRH/MSM/96.13). World Health Organization, Geneva, Switzerland.
- WHO, 2009. *Baby-friendly hospital initiative: Revised, updated and expanded for integrated care. Hospital Self-Appraisal and Monitoring*. World Health Organization, Preliminary version Geneva.
- WHO/SEAR, 2004. *Strategic directions to improve newborn health in the South-East Asia region*. World Health Organization, New Delhi, India.
- WHO, 2002. *Training modules on essential newborn care and breast feeding*. World Health Organization Europe, Copenhagen, Denmark.