An audit of deliveries and outcome at Queen Elizabeth Central Hospital, Blantyre, in 1999

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Abstract

A one-year audit of deliveries at Queen Elizabeth Central Hospital, Blantyre, was undertaken for 1999. The main objective of the audit was to obtain baseline data on forms of deliveries and pregnancy outcome. A total of 12,293 births occurred during the study period. Of these, 11,565 were singleton deliveries, 349 twin deliveries and 10 triplets. Characteristics of singleton deliveries were analysed further when data were available. The age distribution of the mothers ranged from 10 to 55 years with a mean age of 23.4 years. Of 10,314 singleton deliveries, 8710 (84.4%) were spontaneous vertex deliveries, 1121 (10.8%) were caesarian section, 304 (2.94%) were vacuum extraction and 169 (1.63%) were assisted breech deliveries. Breech deliveries had the worst outcome. The maternal mortality rate for the year 1999 was 1224 per 100,000 live births and the perinatal mortality rate was 49.3 per 1000 live births.

Introduction

Audit is a vital activity for any obstetric unit that hopes to provide adequate care to pregnant women and their offspring. Such information can lead to an improvement in obstetric care[1]. Queen Elizabeth Central Hospital (QECH) is the main teaching hospital in Malawi and is a referral hospital for the Southern Region for high-risk mothers. Maternal and perinatal mortality statistics are important indicators of the quality of health care and health status of a population[2]. In-hospital care is generally considered the best practice for maternal assistance even for normal delivery. However, many medical procedures may increase morbidity and mortality if they are carried out without evaluation of their actual effect. They can also make the birth process less "human"[3].

Methods

The audit involved detailed examination of the obstetric records of patients who delivered at QECH from January to December 1999 inclusive. Data on total number of singleton, deliveries, mode of delivery and maternal age were extracted from delivery register books in the Labour Ward. Information on caesarian section deliveries and their outcome was obtained from theatre register books. Other sources included nursery and postnatal registry books. Case files and operation theatre registers were examined for patients who died as a result of pregnancy or complicated labour. The determination of the cause of death was invariably based on recorded findings as autopsies or postmortems were not performed. Data were analysed using Epi Info 6.04.

Results

A total of 12,293 deliveries occurred at QECH in 1999. The number of deliveries was lower than previous years due to renovations of the maternity wing that took place in the delivery suite and operating theatre. This resulted in almost 7% reduction of services provided by the Maternity Wing. The ages of the mothers ranged from 10 to 55 years with a mean of 23.4 years (Figure 1). Mothers aged less than 18 years and greater than 35 years comprised one third (33.7%) of all parturients.

Table 1. Modes of singleton delivery by maternal age

Age in years	*SVD N (%)*	*Breech n (%)*	*Vacuum n (%)*	*C/Section n (%)*	*Destructive VD n (%)*	*Total*
<15	13 (76)	0 (0)	2 (11.8)	2 (11.8)	0 (0)	17
15 - 19	2532 (86)	40 (1.4)	112 (3.8)	249 (8.5)	6 (0.2)	2935
20 - 24	3344(83.6)	65 (1.6)	122 (30.1)	467 (11.7)	2 (0.05)	4000
25 - 29	1546(83.2)	29 (1.6)	40 (2.2)	239 (12.9)	4 (0.2)	1858
30 - 34	759 (84.3)	20 (2.2)	16 (1.8)	105 (11.7)	0 (0.0)	900
>35	516 (85.6)	15 (2.5)	12 (1.9)	59 (9.8)	1 (0.2)	603
Total	8710	169	304	1121	13	10314

Table 2. Pregnancy outcome by mode of singleton delivery

Outcome	SVD n (%)	Breech n (%)	Vacuum n (%)	C/S n (%)	Total n (%)
Live Birth	8342 (95.8)	127 (75.1)	298 (98.0)	1084 (96.7)	9851
Stillbirth	323 (3.7)	38 (22.5)	4 (1.4)	30 (2.7)	395
Early NND	45 (0.5)	4 (2.1)	2 (0.6)	7 (0.6)	58
Total	**8710**	**169**	**304**	**1121**	**10304**

The mode of delivery by maternal age is in Table 1 and pregnancy outcome by mode of delivery is in Table 2. The largest proportions of spontaneous vertex deliveries were in mothers aged between 15 and 30 years. The proportion of breech deliveries increased with increased maternal age. Breech deliveries were associated with the worst outcome compared to other modes of delivery. Overall caesarian section rate was 10.8%. The major indications for caesarian section were cephalopelvic disproportion (28.4%), fetal distress (16.1%), failed trial of scar (11.2%) and elective caesarian section (11.8%), prolonged labour (7.8%), breech presentation (4.2%), antepartum haemorrhage (4.1%), abnormal presentation (3.5%) and cord prolapse (2.3%).

The perinatal mortality was 588 deaths or 49.3 per 1000 for all forms of delivery. A total of 146 mothers died during 1999 and the maternal mortality rate was 1224 per 100,000 deliveries. For those with known age, two-thirds (67%) of the deaths occurred in mothers of less than 30 years of age: 26 deaths of 3000 (0.9%) deliveries in the 15-19 years; 36 deaths (0.9%) of 4095 deliveries for the 20-24 years; 23 of 1898 (1.2%) deliveries for the 25-29 year age groups; 20 of 1920

(1.0%) for 30-34 years; and 21 of 994 (2.1%) for 35 years and older. The age of 20 of the deaths was not recorded. The commonest causes of death were sepsis, haemorrhage, obstructed labour, ruptured uterus and eclampsia.

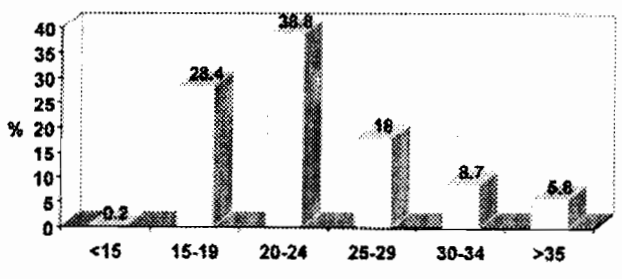
Discussion

The major limitation of this audit is the incomplete data. Nevertheless, we have considered it an important task to compile the available information on the different types of deliveries as best as possible. The audit has demonstrated that the majority of the deliveries were in the age group of 20-29 years which is considered the ideal age to have children[4]. The 35 years or more age groups are at an increased risk of dying in pregnancy and childbirth. Advanced maternal age is a risk indicator rather than a risk factor.[5,6] There were no differences observed on maternal mortality rates between the adolescents and the mothers of 20 to 34 years.

Poor outcomes are usually reflections of avoidable factors. The maternal mortality rate of 1224 per 100,000 live births and the perinatal mortality rate of 49.3 per 1000 are extremely high by any standards. Others have found that infection/sepsis, haemorrhage, obstructed labour, ruptured uterus and hypertensive disorder of pregnancy remain the leading causes of maternal deaths.[7,8] The rates of breech deliveries increased with increasing maternal age. Breech deliveries carry a high risk as indicated by the lower rates of live births. The management of breech presentation is an area of controversy. However, each delivery method has its advantages and disadvantages. It is ultimately the responsibility of the obstetrician and his team to ensure the delivery plan is appropriate for the individual patient.

In general, the overall results were consistent with the literature. Such audit helps to critically analyse the performance of the obstetric unit and helps to identify the avoidable factors. Without proper and accurate medical record, it is exceedingly difficult if not impossible to measure the quality of services and obstetric outcome.

Fig. 1 Percentage age distribution of women who delivered at QECH



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References

Tadesse E, Yusuf L, Zein ZA. Retrospective cross-sectional forms of deliveries at Gendar College of Medical Sciences (GCMS). J Obs Gyn East Central Africa 1992; 10: 77-79.

Julian Bassin Topics in Obstetrics & Gynaecology '95 169 - 179. Julmar Communications Johannesburg.

Bomfim - Hyppolito: Influence of the position of the mother at delivery over some maternal and neonatal outcomes. Int.J Gyn Obs 1998; 63 {supplement No. 1} S67 - S73..

Goldenburg J: Maternal age and parity. Report on an International Comparative Study Sponsored by WHO PP 182 - 218 Bristol. University of Bristol Printing Unit.

Gunning Shapers, L, The Health benefit of prevention. Assimilation approach. In plan pair J Davis K, Gunji A {eds.} Health Policy v989Vol. 12 A'dam Elsevier.

James WH, Birth order, maternal age and birth interval in epidemiology. Int J Epidemiol 1976; 5: 131-132.

Makokha, A.E., Maternal Mortality - Kenyatta National Hospital 1972 - 1977. East African Medical Journal 1980 57{7}: 451 - 461.

Mhango C, Rochat R, and Akutu A. Reproductive Mortality in Lusaka, Zambia 1982-1983. Study of Family Planning 1986: 17{5} 243 - 251.