NEAR MISS MATERNAL MORTALITY IN JOS UNIVERSITY TEACHING HOSPITAL (JUTH), JOS, PLATEAU STATE NIGERIA.

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Background*: Near misses are incidents which might have resulted in a maternal death, but for prompt and effective treatment. Characterizing near-miss mortality is valuable for monitoring the quality of hospital based obstetric care, and for assessing the incidence of life threatening complications. It is the major indicator used to monitor maternal health in the developed world, and it is also being increasingly used in Africa. For every woman who dies; many suffer serious life threatening complications of pregnancy. The near miss case definition was based on five diagnostic categories: Hypertensive disorder in pregnancy, haemorrhage, infections, labour dystocia, and severe anaemia*

Aim*- To determine the incidence of near-miss obstetric mortality in Jos University Teaching Hospital (JUTH) over a 12 month period*

Method*: Retrospective analysis of near-miss maternal morbidity from 1st January 2006 to 31st December 2006 was carried out. Data on maternal age, parity, diagnosis, booking status, duration of admission and treatment were collected. Analysis was done with EPI-Info, version 6 statistical software packages.*

Result*: There were 2,972 deliveries, and 73 near-miss cases. The incidence of near misses in the year under review was 2.5%, or 2,500 per 100,000 deliveries. Forty of the 73 case files were retrieved .Hypertensive disorders constituted 32.5%, and were the leading event. It was followed by haemorrhage (27.5%), infections (22.5%), dystocia (15%), and severe anaemia (2.5%). Majority (60%) of the cases were unbooked, many (27.5%) booked elsewhere, and only a small minority (12.5%) booked in this center.*

Conclusion*: Hypertensive disorders, haemorrhage, and infections were the leading near miss events in this center, and efforts should be made to further allocate more resources for managing these cases, especially in unbooked patients.*

INTRODUCTION

Near-miss events are defined as acute obstetric complications that immediately threaten a woman's survival, but do not result in her death, either by chance or because of hospital care she receives during pregnancy, labour or within 6 weeks after termination of pregnancy or delivery[1-2].

Characterizing near-miss mortality is valuable for monitoring the quality of hospital based obstetric care, and for assessing the incidence of life threatening complications[3]. It is the major indicator used to monitor maternal health in the developed world[3], and it is also being increasingly used in Africa[4]. For every woman who dies; many suffer serious life threatening complications of pregnancy[3].

A Canadian study defined mortality of severe obstetric complication to be: the number of women, who had a life threatening condition for each 100, 000 live births, in any given place, at any given time[5]. Near miss cases in 6 African countries were discovered to be due to complications arising mainly between 28th weeks of gestation and 42 days after delivery, which would have been lethal or irreversibly devastating, if medical help was not available[6].

More severe maternal morbidity is seen in women who do not attend antenatal care in a standard health unit, but are referred there when they develop life threatening complications[4].

METHODOLOLGY

This is a retrospective study of near miss (severe maternal) mortality in JUTH, from 1st January 31st December 2006. The medical records of the patients

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Table I: Diagnosis distribution of near miss events in JUTH

S/N	Diagnosis	Frequency	Percentage
1.	Hypertensive disorders in pregnancy	13	32.5%
2.	Haemorrhage	11	27.5%
3.	Infections	9	22.5%
4.	Dystocia	6	15%
5.	Severe anaemia	1	2.5%
Total		40	100%

Table II: Booking status of patients with near miss mortality in JUTH

S/N	Booking status	Frequency	Percentage
1.	Unbooked	24	60%
2.	Booked elsewhere	11	27.5%
3.	Booked in JUTH	5	12.5%
Total		40	100%

were retrieved from the records department, theatre, gynaecological, antenatal and postnatal wards. Data on maternal age, parity, diagnosis, booking status, duration of admission and treatment were collected. Analysis was carried out using Epi-info, version 6 statistical software packages. Frequency tables, mean, and percentages were generated.

The near-miss mortality was grouped under 5 major diagnostic categories: 1. Hypertensive disorders of pregnancy which included severe pre-eclampsia and eclampsia; 2. Haemorrhage, which comprised both ante-partum and post-partum haemorrhage, 3. Infections which were cases of post-abortal sepsis and puerperal sepsis. 4. Dystocia which included prolonged obstructed labour and uterine rupture. 5. Severe anaemia.

The criteria for inclusion in the study were: ICU admission, transfusion of ≥ 3 units of blood, genital sepsis with systemic symptoms or clinical features of septic shock, severe or neglected dystocia and severe anaemia with heart failure.

RESULTS

There were 2,972 deliveries and 73 near-miss cases during the one year period under review. The incidence of near-miss maternal mortality was 2.5% of deliveries. Forty, out of the 73 case files were retrieved for analysis. Hypertensive disorder was the leading near-miss event 13 (32.5%) (Fig.1). This included 12 cases of eclampsia and one case of severe pre-eclampsia with anarsarca and oliguria. Haemorrhage was the second most common event 11 (27.5%). This included 7 cases of abruptio placenta, either with coagulopathy or necessitating transfusion of ≥3 units of blood; and 4 cases of severe post partum haemorrhage. Infectious morbidity was the third most common near-miss event 9 (22.5%). It comprised 5 cases of septic abortions and 4 cases of puerperal sepsis with fever or septic shock. Dystocia accounted for 6 cases (15%), and there was a case of severe postpartum anaemia in a known sickler (2.5%). These are summarized in Table-1.

Most of the patients (60%) with life threatening morbidities were unbooked. Many others (27.5%) were booked elsewhere, while only a minority (12.5%) booked in this center. These are shown in table 2.

Primiparae (45%) and grandmultiparae (32.5%) were the most common. Average parity was 3 with a range of 1-10.

Half (50%) of the near miss patients stayed a week or less on admission. Average duration of admission was 11 days, with a range of 1-51 days. Teenagers constituted 25% of cases of near miss events. The age range was 16-45years, with a mean of 28years.

Fig.1:

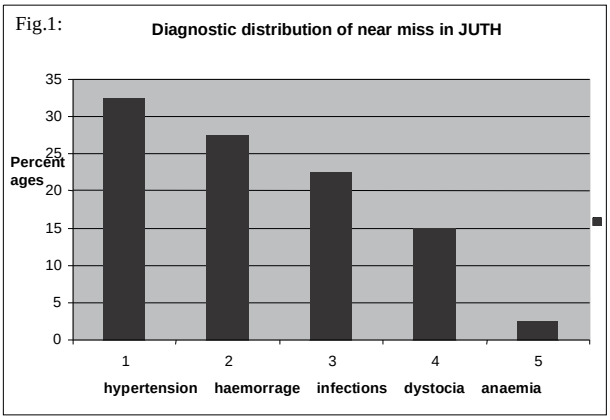
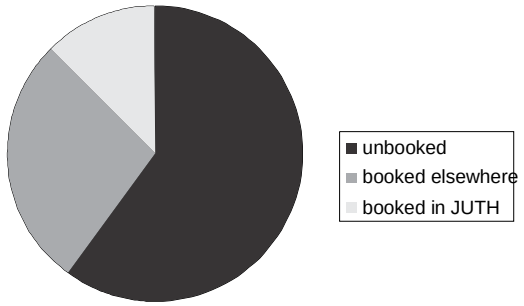


Fig.2. Booking status of patients with near miss Mortality in JUTH



DISCUSSION

Most studies on near miss maternal mortality utilized intensive care unit (ICU) admission as one of the criteria for inclusion in the studies[7]. The indications for admission into ICU are different in various countries, and differ in different institutions within a country[7]. The criteria for regarding an obstetric morbidity as near miss also differ in various studies. The differences in definition and identification of cases are major limitations in comparison of near miss data[8]. Studies in industrialized countries commonly use ICU-admission or organ-system dysfunction/ failure as criteria for case selection[9]. Though organ system based criteria are the most specific and least vulnerable to bias[8]; the case definition used in this study suits our own circumstances, and will allow comparison of local studies.

The incidence of near miss maternal morbidity of 2.5% in this institution is comparable to other studies in Africa, but much higher than in developed countries[8]. This disparity is due to differences in identification of cases. A hypertensive disorder in pregnancy was the most common near miss event, and haemorrhage, the second most common. This is similar to reports from Sagamu, Nigeria[10].

Most patients with near miss morbidities were unbooked or were referred when they developed life threatening complications. This suggests that resources for handling emergency referral of cases of hypertension and haemorrhage need to be enhanced. Early referral of severe cases from primary care centers, and enlightening the populace on the importance of antenatal care will further decrease the mortality from severe maternal morbidity.

Primiparous and grandmultiparous women are at greatest risk of having a life threatening maternal morbidity, and booking these women at specialist clinics will decrease the morbidity and mortality in these groups.

This new measure of maternal care allows for an effective audit system, because it is clinically based, and the cases identified reflect the pattern of maternal death[4]. Near miss data also enhance the determination of fatality ratio, which is an objective indication for the quality of obstetric care. Fatality ratio is the ratio between the number of maternal deaths and all cases of women who experience life threatening complications[7].

REFERENCES

1. *Campbell S, lees C. Maternal and pernatal mortality: The confidential enquiries. In: Campbell S, lee C (Eds). Obstetrics by Ten Teacher; 17th edition. ELST with Arnold, 2000; 3: 19-32.*

2. *Ronsmans C, Fillip V: Reviewing severe maternal morbidity: learning from survivors life-threatening complications. In: Beyond the Numbers: Reviewing Deaths and complications to make pregnancy safer. Geneva: world Health organizations: 2004; 103-124.*

3. *Geller S.E, Rosenberg D, Cox S.M, Kilpatrick S. Defining a conceptual framework for near miss maternal morbidity. J AM Med Women Assoc 2002; 57 (3): 13 5-9.*

4. *Mantel G.P. Buchmann E, Rees H, Pattinson R.C. Severe acute maternal morbidity: a pilot study of a definition for "near miss" British J of Obstet. Gynaecol 1998; 105: 985-90.*

5. *Canadian perinatal surveillance system steering committee and Health indicators for Canada, a resource manual. Severe maternal morbidity ratio.2000: 46-8. URL: http/ www.hc-se. gc.ca/pphb/rhs-ssg/phic-ispc.*

6. *Kaye D, Mirembe F, Aziga F, Namulema B. Maternal mortality and associated near misses among emergency intrapartum obstetric referrals in Mulago Hospital Kampala, Uganda. East Afr med J.2003; 80 (3):144-9*

7. *Minkauskiene M, Nadisauskiene R, Padaiga Z, Mankari S. Systemic review on the incidence and prevalence of severe maternal morbidity. Medicina 2004; 40 (4):1-11.http:// medicina.Kmu.It.*

8. *Say L, Pattinson R.C, and Gulmezoglu A.M. WHO system review of maternal morbidity and mortality: The prevalence of severe acute maternal morbidity (near miss). Reprod. Health 2004, 1:3. [http://www.Reproductive-health journal.Com/ content/1/1/3].*

9. *Baskett T.F, Sternadel J. Maternal intensive care and near miss mortality in obstetrics. B.JOG 1998, 105:981-984*

10. *Olufemi T.O, Adewale O.S, Adetola O.U, Olusoji D. "Near miss" Obstetric events and maternal deaths in Sagamu Nigeria, a retrospective study. Reproductive Health 2005, 2:9. http://www.reproductive health journal .com/content/2/1/9.*