

## **ORIGINAL ARTICLE**

### **Pregnancy outcome in women involved in road traffic accidents in Sokoto**

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#### **Abstract**

**Background:** Road traffic accidents (RTA) are common in Nigeria. Pregnant mothers could be involved in such accidents and this might affect pregnancy outcome.

**Method:** A retrospective analysis of pregnant mothers admitted at Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria because of road traffic accidents between January 1998 and December, 2002, was undertaken to determine the incidence, type of injury and pregnancy outcome.

**Results:** One hundred and forty nine women admitted because of major injuries sustained after road traffic accidents. Twelve (8%) of these women were pregnant at the time of the accident. Gestational age ranged from 16 to 38 weeks. Fall from commercial motorcycles was the most common accident with deep lacerations and long bone fractures. Obstetric complication included abruptio placentae and premature uterine contractions. There was normal delivery in 9 patients, 2 stillbirths and one moth with head injury died undelivered.

**Conclusion:** Early consult with appropriate obstetric intervention was associated with good foetal and maternal outcome. The emergency duty doctor should always think of the possibility of a co-existing pregnancy whenever managing any woman within the reproductive age group involved in RTAs.

**Key words:** Road traffic accident, pregnancy, outcome

#### **Introduction**

Trauma is rapidly becoming the main cause of maternal mortality in the developed, western countries where other causes of death have been reduced by improved obstetric care.<sup>1, 2</sup> Motor vehicle accidents are said to be the most common cause of major blunt abdominal trauma.<sup>3-5</sup>

Road traffic accidents (RTAs) are common in Nigeria. Seventy seven percent of all admissions into one emergency medical centre in Lagos were due to road traffic accidents.<sup>6</sup> Pregnant mothers could also be involved in road traffic accident.<sup>6</sup> Morbidity or mortality can occur in the foetus and/or the mother. For the first week after fertilisation the conceptus is relatively resistant to trauma as it is self-contained and small. The uterus remains a pelvic organ until 12 weeks of gestation and being protected by the bony pelvis, is relatively well sheltered from abdominal injury. When it becomes an abdominal organ later in pregnancy, most of its bony support is lost. The potential for massive blood loss from a traumatised uterus in late pregnancy therefore exist. Major maternal trauma, particularly if involving the l pelvis,

may subsequently have effects on the mode of delivery. Shock in pregnant mothers involved in road traffic accidents is aggravated by uterine compression on the inferior vena cava, especially in late pregnancy. Routine nursing of all such patients on the left lateral side or on the back with the right hip flexed is advocated.

Sokoto is a state capital, located in the far north-western part of Nigeria. The most popular mode of transportation within the metropolis is the commercial motor cycle, known as Kabu-kabu, Achaba or Okada. Motor cars and buses are engaged mainly in long distance journeys.

The mandatory use of seat belts by drivers and front seat passengers was just introduced in January 2003, in Nigeria. There is however, no legislation for wearing crash helmets by riders or passengers of motorcycles yet. There is also limited data on the incidence of significant foetal or maternal injury as a result of road traffic accidents in pregnancy. The objective of this study therefore, was to determine the incidence, type of injury and pregnancy outcome in pregnant women admitted because of manor injuries following road traffic accidents.

## Materials and Methods

A retrospective study of pregnant mothers involved in road traffic admitted at Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria, between January 1998 and December, 2002. Relevant information were retrieved from medical case records, ward registers and operation registers for the period of study.

## Results

Within the five-year study period, 149 women admitted because of major injuries sustained after road traffic accidents. 12 of these women were pregnant at the time of the accident and constituted the subject for analysis.

Maternal age ranged from 17 to 36 years. 7 of the women fell from motorcycle, 4 patients were passengers in motor cars/buses while one pregnant mother was knocked down by a motorcyclist.

In 10 patients, there were deep lacerations on the lower limbs, 3 patients had fractures of the long bones, while there were 2 pregnant mothers with head injury.

Gestational age ranged from 16 to 38 weeks. Obstetricians were invited to attend to 10 of the 12 patients. In six patients, pregnancy was uneventful with normal delivery. There were two cases of abruptio placentae with delivery of fresh stillbirths while two patients had premature labour at about 34 weeks. One of the two patients with head injury died undelivered at 38 weeks gestation within one hour of admission.

## Discussion

Eight percent of the women admitted with road traffic accidents within the study period had co-existing pregnancy. This figure is comparable to the 6 – 7% reported by other authors.<sup>7, 8</sup> However, the figure probably underestimated the true incidence because early pregnancy is often unrecognised in the resuscitation room.<sup>9</sup> This might be the explanation for the absence of mothers with first trimester cyesis in the study group. The performance of a rapid pregnancy test in the resuscitation room on patients of childbearing age had been recommended for those unaware of their pregnancy state.<sup>9</sup>

It is not surprising that injuries following falls from motorcycles were the most common, since that is the main mode of transportation in the city. However, management of musculoskeletal injuries like deep lacerations and long bone fractures is hardly altered by the presence of a foetus. In fact, it is reported that the management of women surviving road traffic accidents is mainly concerned with resuscitating the mother, as this is also the best means of resuscitating the fetus.<sup>10</sup> pregnancy outcome was uneventful in 5 of the 8 mothers with motorcycle accidents.

The two cases of head injury in this series were due to falls from motorcycles. While one recovered

from the injury, the second patient accounted for the only maternal mortality. It has been shown that the use of helmet lowers the risk of traumatic brain injury<sup>11</sup> and a case is made for the introduction of such legislation in Nigeria.

The uterus, even in its expanded and thinned state, is very muscular and elastic. It is therefore seldom ruptured even after extreme trauma.<sup>5</sup> There was no uterine rupture in this series. Abruptio placentae was the obstetric complication in two patients that were passengers in motor cars. The major concern after blunt trauma to the abdomen is abruptio placentae, for the placenta is less compliant than the uterus which makes it prone to abruptio. Some authors have recommended cardiocographic monitoring for 48 hours after admission when abruptio placenta is suspected.<sup>12</sup> The alternative when there are no clinical features on first assessment is to advise the patient to report back if pain or bleeding occurs within 48 hours, since abruption may present within this time.<sup>12, 13</sup> The Kleihauer-Betke test on rhesus negative mothers for the assessment of foetomaternal haemorrhage is useful in predicting rhesus isoimmunisation, as anti-D immunoglobulin can effectively prevent this complication if administered within 72 hours of the antigen insult.<sup>14</sup>

In road traffic accidents, where the mother is deteriorating and becomes unsalvageable, there may be a place for urgent caesarean section to salvage the foetus. There are reports of 'peri-mortem' caesarean section done when all else fail.<sup>15,16,17</sup> Perhaps, if an obstetrician attended to the patients that died undelivered with head injury at 38 weeks, the foetal outcome may have been different. This emphasises the need for collaborative management.

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