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TWIN BIRTHS IN THE COMOROS

M. A. Abdul, MBBS, Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria

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### ABSTRACT

**Objective:** To determine the prevalence and clinical significance of twin births in the Comoros Islands.

**Design:** Combined retrospective and non-randomised prospective study.

**Setting:** Hospital El-Ma'aru Moroni Grand - Comoros and Center Medico- Chirurgical Domoni - Anjouan.

**Subjects:** One hundred and nine patients with twin deliveries.

**Results:** During the period of study, there were 4370 deliveries, out of which 109 were twin births, giving an incidence rate of 25/1,000 deliveries. Twin births rate increased with increasing parity. The perinatal mortality rate of twin delivery was seven times that of singleton. Low birthweight rate was 54% among twin births. Retention rate of second twin was 12%, with home delivery of the first co-twin in 62% of cases. Uterine atony and malpresentation were the principal factors in the aetiology of retained second twin.

**Conclusion:** Multiple pregnancy is common in the Comoros and the epidemiology and clinical significance are consistent with established data. Clinicians and midwives in Comoros must be aware of these facts, and endeavour to make early diagnosis and institute appropriate management within the available scarce resources, in order to improve maternal and foetal outcome of twin births.

### INTRODUCTION

The prevalence of multiple births vary with geographic location and among races. This variability is principally accounted for by dizygotic twinning while monozygotic twin rates remain relatively constant at 3-5 per 1000 deliveries(1). Twin birth is commoner in sub-Saharan Africa, with the highest incidence recorded in Nigeria (40-50 per 1000 deliveries)(1-3). In North America and Europe, the rate is 10-12 per 1000 and 5 per 1000 deliveries in the orientals(1-3).

Comoros, one of the poorest countries in Africa is an archipelago of four islands located in western Indian Ocean half-way between Madagascar and the East African Coast (northern end of the Mozambique channel). The total area of the four islands is 2,236 square kilometres and they lie along a northwest - southeast axis within sight of each other but are quite distinct(4). These islands include: (i) Grande Comores (Ngazidja) the largest of them. The country's capital and major seaport Moroni is located in this island. Moroni is also the largest town in the islands; (ii) Anjouan (Nzwani) - the second largest of the islands and the most densely populated; (iii) Moheli (Nwali) and; (iv) Mayotte (Mahore) - the smallest of the islands and still under French rule.

There are two referral centres in each of the islands and each referral centre serves an average of five primary

health care centres. The total population of Comoros in 1996 (excluding Mayotte) was 569,237 with a growth rate of 3.5%(5). The inhabitants of these islands are products of mixed races chiefly: African, Shirazi/Arabs and the Malagasy descendants(4).

This study was conducted to document the prevalence of twin births in this unique community, the clinical significance of twin deliveries and the phenomenon of retained second twin. To the best of our knowledge, this is probably the first of such documentation.

### MATERIALS AND METHODS

This study was conducted in two centres; namely, Hospital El-Ma'aruf, located in the country's capital Moroni, and the country's major referral Hospital and Center Medico-Chirurgical Domoni-Anjouan, a referral centre serving an estimated population of 70,000 including six primary health centres. The delivery register of the labour unit of El-Ma'aruf Hospital was examined and clinical data including maternal age, parity, birth, weight, sex and birth interval between first and second twin, of all consecutive twin deliveries between January 1998 to September 1999 were analysed. Data from Domoni-Anjouan were prospectively collected and involved all consecutive twin deliveries conducted within the same period.

Antenatal notes (if any), labour and delivery details, including congenital foetal anomalies and maternal complications were recorded and analysed.

## RESULTS

Between January 1998 and September 1999, 3755 deliveries were conducted in El-Ma'aruf hospital, out of which 86 were twins and three were triplets. In Domoni-Anjouan, during the same period, 615 deliveries were conducted, of which 23 were twin births and two were triplets. This gives an incidence rate of 23 per 1000 deliveries for Moroni and 37/1000 for Domoni-Anjouan and an overall incidence of 25 per 1000 deliveries. The number of twin births by age and parity for both centres are shown in Table 1 and 2 respectively. Both revealed high proportion of twin births among primigravidas/primiparas aged between 20-29 years and grandmultiparas aged 30 years and above. Thirteen per cent of women of the 23 twin deliveries in Domoni had a positive family history of twinning and nine per cent had previous twin birth.

**Table 1**

*Twin births by maternal age and parity in El Ma'aruf hospital Moroni*

Parity	Maternal age in years			40	Total
	19	20-29	30-39		
0	2	10	0	0	12
1	4	9	4	0	17
2	1	5	3	0	9
3	0	6	2	0	8
4	0	6	1	0	7
5	0	2	8	2	12
Total	7	38	18	2	65

Note: Only 65 patients of the total 86 with twin births had their age and parity documented

**Table 2**

*Twin births by maternal age and parity in center Medio-Churgical Domoni-Anjouan*

Parity	Maternal age in years			40	Total
	19	20-29	30-39		
0	1	8	0	0	9
1	1	4	0	0	5
2	0	1	0	0	1
3	0	0	0	0	0
4	0	0	0	0	0
5	0	1	7	0	8
Total	2	14	7	0	23

**Table 3**

*Perinatal mortality rates of singletons vs twin deliveries in centre Medico-Churgical Domoni-Anjouan*

Delivery	No. of births	No. of perinatal deaths	Perinatal mortality/1000
Singleton	590	27	46
Twins	23	7	304
All deliveries	615	34	55

Note: There were two triplets deliveries

The perinatal mortality rates for both singleton and twin births in Domoni-Anjouan are shown in Table 3. The perinatal mortality rate for twin births in Domoni was about seven times that of singleton deliveries and the overall perinatal mortality rate was about 55/1000 deliveries. Of the 86 pairs of twins delivered in Al-Ma'aruf, 78 pairs had their birth weights completely documented, out of which 50% had weights lower than 2,500 grammes. In Domoni, 32 of the 23 pairs of twins had low birth weight. This gives a low birth weight rate of 54% among all the twins. Using a definition of retained second twin as a birth interval of 30 minutes or more between the first and the second twin as proposed by Adeleye(6), 13 retained second twins were encountered in this study - seven in Domoni and six in El-Ma'aruf, resulting in a retention rate of twelve per cent. Sixty two per cent of the 13 retained second twins, had their first co-twin delivered at home. Uterine atony was responsible for nine (69%) retained second twins, transverse lie for two and the remaining were accounted for by breech presentation.

Of the 23 twin deliveries in Domoni, only one neonate (a second twin) had multiple congenital anomalies including ambiguous genitalia and died in the immediate neonatal period. Its first co-twin was a male and did well. One major, but rare maternal complication (acute complete puerperal uterine inversion) was encountered in Domoni.

## DISCUSSION

The incidence rate of 25 per 1000 deliveries for twin births in this study is similar to the rates reported in many parts of sub-Saharan Africa(1-3,6). Our findings are also in agreement with existing knowledge of increasing twin births with increasing maternal age and parity. However, the relatively high number of twin deliveries among primigravida/primiparas aged 20-29 years is very striking. With a twinning rate of 25 per 1000 deliveries, twin gestation can be said to be common in Comoros with the implication that clinicians, particularly general practitioners, (as obstetricians are few) and midwives practising in this part of the world must have a high index of clinical suspicion in order to make prompt diagnosis and institute appropriate management.

Our figure of 54% for low birth weights among twin deliveries also concur with documented data(2,3,8). Although our prospective sample size is small, it revealed what is already known of higher perinatal mortality rate for twin births compared to that of singleton deliveries(2,3,6,7). In this study, perinatal mortality for twin deliveries was seven times that of singleton births.

Using 30 minutes as the cut-off limit for retention of second twin as mentioned above, the retention rate of 12% in this study is lower than that reported by Adeleye(6) and Ogunniyi(9) in western Nigeria (14%), Adinma(9) in eastern Nigeria (19%) and Harrison(8) in northern Nigeria (17%). However, its aetiological factors and presentation are similar. Sixty nine per cent was accounted for by uterine atony, followed by malpresentation, and 62% had their first co-twin delivered at home i.e emergency

admissions. Utilising a high index of clinical suspicion, and confirmation of diagnosis using plain abdominal x-rays or ultrasound (available only in very few centres) during the antenatal period and guided counselling for hospital confinement, the retention rate of second twins will significantly reduce.

Owing to the small size of our prospective data, only one major but rare and serious maternal complication was encountered - an acute complete puerperal uterine inversion, following twin birth at home and presented in our unit two hours post delivery in shock. She was resuscitated and inversion corrected using Johnson's method(11) under general anaesthesia. Two patients had Caesarean section for retained second twin due to transverse lie with delivery of live babies.

It can be concluded that twin gestation is common in Comoros and its epidemiology is consistent with established data. Clinicians and midwives offering maternal health services in this part of the world must exercise a high index of clinical suspicion for prompt diagnosis and appropriate management within available limited resources in order to improve both foetal and maternal outcome of twin deliveries.

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