

The effect of traditional herbal medicines on pregnancy outcome

The King Edward VIII Hospital experience

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Objective. To determine the effect of herbal medication in pregnancy.

Method. Patients ($N = 229$) presenting in early labour were randomly selected and interviewed. All interviews were conducted by one of the authors (MHM) familiar with the nuances of the Nguni languages.

Results. One hundred and twenty-six patients (55%) gave a positive history of herbal ingestion (study group) and 103 (45%) had a negative history (control group). Fifteen per cent of the control group and 55.6% of the study group had grade II - III meconium staining of liquor, while 22% of the control group and 38.5% of the study group were delivered by caesarean section.

Conclusion. Herbal medication is commonly used in pregnancy by women attending King Edward VIII Hospital. Its use may lead to fetal distress, as indicated by the high frequency of meconium-stained liquor and high caesarean section rates in this group of women presenting in labour.

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There has recently been an upsurge of interest in the role of traditional medicines on the part of the World Health Organisation and health service authorities of many developing countries.¹⁻⁶ This interest arises from the fact that traditional medicines not only have important cultural roles but may have beneficial medicinal effects and be more cost-effective than modern pharmaceutical agents. Furthermore the ingestion of herbal medicines during pregnancy is reported to be high in African countries; herbal ingestion rates of 45% have been documented.^{3,5,7} Unpublished data from King Edward VIII Hospital (KEH) showed that approximately 44% of women attending the antenatal clinic take herbal medication at some stage in their pregnancies.

The use of herbal medications in pregnancy, however, may have untoward effects on labour and the fetus and there have been a number of reports of its association with

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maternal toxicity.^{5,6,9} The most common medication taken by people of Nguni origin (Xhosa and Zulu) during pregnancy is known as *isihlambezo* (that which cleans). This decoction made from a variety of plants is taken regularly during pregnancy until term. Although Veale *et al.*⁸ have reported on the botanical nature of such plants, it appears that individual families have their own recipes for *isihlambezo* and that these are closely guarded secrets.

The ingestion of *isihlambezo* has been implicated in obstetric complications but it has not been formally investigated.⁷ Mitri *et al.*⁹ prospectively studied the obstetric effects of maternal self-medication (laxatives, enemas, castor oil and *isihlambezo*) and although they did not study *isihlambezo* specifically, they reported an association between meconium passage in labour and maternal self-medication. The aim of the present study was to establish any association between the passage of meconium-stained liquor *in utero* and herbal ingestion.

Patients and methods

The study was conducted at KEH from January 1994 to June 1994. This hospital serves a high-risk, predominantly urban and rural African population. Patients presenting in early labour were selected randomly, informed consent was obtained, and they were interviewed by one of the authors (MHM) familiar with the nuances of the Nguni languages. A history of herbal medication during pregnancy and early labour was taken, and data were collected on a standard questionnaire. Standard obstetric management of labour was followed. The appearance of the nature of liquor on rupture of membranes was recorded and meconium staining of liquor was graded according to an arbitrary measurement of clear, mild (MSL I), moderate (MSL II) or thick (MSL III).¹⁰ Details of the outcome of labour were subsequently obtained from the hospital records.

Statistics

Descriptive statistics (frequencies, percentages and ranges) were used. The chi-square test was used to compare the control and study groups and a *P*-value of < 0.05 was taken as statistically significant.

Results

A total of 229 patients in labour were interviewed and divided into two groups, depending on whether a positive history of herbal ingestion was obtained or not. A positive history of herbal ingestion was obtained in 126 (55%) patients (study group); the remaining 103 formed the control group. Table I shows the distribution in age, parity and gestational age of the two groups. Twenty-two per cent in the control group and 39% in the study group underwent caesarean section. This difference was statistically significant (*P* = 0.008). The indications for caesarean section were fetal distress, MSL II/III, cephalopelvic disproportion and poor progress (Table II). Each patient had more than one indication for caesarean section.

Table I: Clinical data on all patients

Variable	Control group (N = 103)		Study group (N = 126)	
	Mean	Range	Mean	Range
Age (yrs)	25.8	14 - 46	24.0	13 - 50
Parity	2.0	0 - 7	2.0	0 - 7
Gestational age (wks)	38.0	34 - 42	38	34 - 42
Fetal weight (kg)	3.2	1.5 - 4.3	3.1	2.0 - 4.0
Normal vaginal delivery	N = 80	78%	N = 79	61%
Caesarean section*	N = 23	22%	N = 47	39%

* *P* = 0.008.

Control group — no history of herbal ingestion; study group — history of herbal ingestion.

Table II: Indications for caesarean section

Indication	Herbal ingestion group	Control group	<i>P</i> -value
Fetal distress	109 (87%)	47 (46%)	0.001
Cephalopelvic disproportion	33 (26%)	70 (68%)	0.0001
Poor progress	11 (9%)	28 (27%)	0.05
MSL II/III	103 (82%)	33 (32%)	0.0001

In the control group 72 (69.9%) of the patients knew about *isihlambezo*. Seventy-five per cent of this group were discouraged from using the medication by friends and religious authorities or were afraid of side-effects. In the study group 123 (97.6%) took herbal medication well into the third trimester and 60 (48%) had taken a dose less than 12 hours prior to hospital admission.

The majority of patients presented in early labour, viz. 82.5% of the control and 73.8% of the study group. This difference was not statistically significant (*P* = 0.058). Only 22.3% of the control group presented with ruptured membranes; the time since membrane rupture had been less than 24 hours in 85% of them. In the study group, 29.8% had ruptured membranes and 98.3% of the women had had ruptured membranes for less than 24 hours.

Liquor was inspected immediately on admission or after artificial rupture of membranes. Fifteen per cent of the control group had MSL II or III while 55.6% of the study group had MSL II or III; the difference between the two groups was statistically significant (*P* = 0.0001). There was no significant intrapartum change in meconium staining of liquor or fetal heart rate abnormalities as detected by electronic monitoring between the groups.

Oxytocin was used for augmentation in two regimens; one of 2 units in a litre of dextrose water and the other of 10 units in a litre of dextrose water. Twelve per cent of the study group and 26% of the control group required oxytocin to augment labour. In the control group, 33% required 10 units/l dextrose water, while 6% in the study group required this concentration. Similarly, in the control group, 59% required a concentration of 2 units, while in the study group, 88% required only 2 units/l dextrose water to achieve adequate uterine activity.

In the herbal ingestion group, 90% had an Apgar score of 9 at 1 minute and 93% had an Apgar score of 10 at 5 minutes; in the control group, 94% had an Apgar score of 9

at 1 minute and 98% had an Apgar score of 10 at 5 minutes.

Only 3 babies in the non-herbal ingestion group and 2 babies in the herbal group developed asphyxia neonatorum and required neonatal intensive care. All babies survived and the average birth weight in both groups was 3 200 g.

Discussion

The study confirms the clinical impression that most women of Nguni origin use traditional herbal medicines when pregnant; 55% of women presenting in early labour gave a positive history of having had herbal medication at some stage during their pregnancy. More importantly, 48% took herbal medication less than 12 hours before admission to hospital. These findings also confirm our previous findings of a high prevalence (48%) of ingestion of herbal medication during the antenatal period (unpublished data). Previous reports have suggested that the use of traditional medicines is widespread, mainly in rural areas because of the lack of modern health care facilities,^{5,7} but the present study was performed in an urban setting and strongly suggests that the ingestion of herbal medicines during pregnancy is widespread. It has to be said that practitioners of traditional medicine promote the advantages of herbal medication during the antenatal period and early labour,⁷ without paying sufficient attention to the side-effects of such remedies. They need to be made aware of the physiological changes during pregnancy that affect drug distribution in mother and fetus. It is only by providing information to the practitioners of traditional medicine that such decoctions can be made safer. This is of great importance because we found that 56% of women who gave a positive history of herbal ingestion had meconium-stained liquor, compared with 15% in the control group ($P = 0.001$). Similarly, Mitri *et al.*,⁹ who studied the effect of self-medication with various 'over-the-counter' drugs at least 2 days prior to hospital admission for delivery, found an incidence of meconium passage of 30%. Although they did not define their study population in detail, only 9.2% of their patients who gave a positive history of herbal ingestion had meconium staining of the liquor.

The actual cause of meconium-stained liquor associated with herbal ingestion is not known, but it has been suggested that the phenomenon may be caused by hypertonic uterine activity.⁸ In the present study, there was circumstantial evidence that these drugs may cause excessive uterine activity. Although the duration of labour and the use of oxytocin were the same in both groups, larger doses of oxytocin (10 units/l) were needed to bring about optimal contractions in the control group than in the study group. Further investigation into this finding is required.

The finding of a high prevalence rate of meconium in those who ingested herbal medicine also led to higher caesarean section rates in the study group (38% study group v. 22% control group; $P = 0.008$). The high caesarean section rate in the control group reflects the overall high caesarean section rate at King Edward VIII Hospital, a major referral hospital serving a lower socio-economic black African population.

Although Larsen *et al.*⁷ elucidated the role of traditional birth attendants and the use of herbal medication among pregnant women in rural areas, the present study highlights the widespread use of herbal medication in urban dwellers too and identifies such women as being at risk for the passage of meconium-stained liquor and caesarean section. The effect of such decoctions on uterine activity needs further study.

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