

TRANSBUCCAL USE OF DESAMINO-OXYTOCIN IN INDUCTION OF LABOR AND IN AUGMENTATION OF LABOR

by

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There are occasions when it becomes necessary to induce labour on medical grounds or for convenience. Induction of labour for convenience of patient and the doctor and his hospital is becoming more popular. Intravenous pitocin with or without rupture of the membranes is successful in fair number of cases. The intravenous route poses some problems for the patient. The patient does not like to be tied down to the drip for many hours. It is producing discomfort to the arm where the drip is initiated. Thus, it interferes with normal movements of the patient. Sometimes the woman goes into spontaneous labour but uterine contractions become ineffective and thus further progress of labour is halted. This results in prolonged labour with higher risk to the foetus and the mother.

A new synthetic derivative of oxytocin is isolated. It differs from oxytocin only in the lack of an amino group in position one. Syntocinon and natural oxytocin are inactivated irreversibly by the serum oxytocinase specific in pregnancy and by tissue peptidases. In the blood, desamino-oxytocin cannot be inactivated by the

serum oxytocinase because of the missing free amino group between cystine rest and tyrosine. However, desaminooxytocin can be inactivated by certain enzymes in erythrocytes Semm (1967). Animal experiments have shown that oxytocic effect of desaminooxytocin is 50-100 per cent more than that of oxytocin. Desaminooxytocin is readily absorbed from buccal mucosa. The purpose of the present study was to find out the efficacy of desaminooxytocin after buccal administration in cases of uterine inertia and in cases of induction of labour.

Material and Methods

Labour was induced in 55 women at or near term. They were normal in all respects and labour was induced for convenience. Twenty-five women developing uterine inertia after spontaneous onset of labour were selected for this trial after excluding disproportion by clinical examination. The pelvic score of the cases selected was assessed by the method suggested by Khew (1968) Table I. The patients were given transbucally tablet containing 50 international units of desaminooxytocin. The tablets were put in alternate cheeks every 30 minutes till rhythmic and satisfactory uterine contractions ensued. The dose was then reduced to 25 units every 30 minutes. The tablets

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TABLE I
Pelvic Score

	0	1	2
Cervical effacement	tubular 2 cm long	1-2 cm.	less than 1 cm
Dilatation of the cervix	Firm	soft, not stretchable	soft and stretchable
Direction of the cervical os	sacral	axial	anterior
Station of presenting part in relation to the ischial spines	above -2 cm.	-2 cm to -1 cm.	- 1 cm to zero

TABLE II
Age and Parity in Induction and Augmentation Cases

Age	Induction	Augmen- tation	Parity	Induc- tion	Augmen- tation
Upto 20 years	9	5	I	16	10
21-25	25	10	II-IV	30	10
26-30	15	6	V+	9	5
31-35	6	4			
	55	25		55	25

were discontinued if the labour continued to progress favourably. Account was kept of the total tablets consumed. The Apgar score of the baby was recorded.

Analysis

Most of the patients (88 per cent) were below 30 years of age. The primigravidae accounted for one third of the total cases (Table II). There were few patients above parity five because of the risk of oxytocin therapy in grand multiparous women. Pelvic score of less than five was noted in 20 cases in induction series and 4 cases in augmentation series (Table III). In the induction series, 45 women (82 per cent) required upto 10 tablets to deliver whereas 16 women (64 per cent) in the augmentation series required upto 5 tablets for delivery. Average number of tablets required to complete the deli-

TABLE III
Pelvic Score

	Induction	Augmentation
Up to 5	20	4
6-8	25	21

very in induction of labour group was 8.6 as against 5.2 tablets required in cases of augmentation of labour (Table IV). The

TABLE IV
Tablets Consumed

	Induction	Augmentation
Upto 5 tablets	9	16
6-10 tablets	36	7
11+	10	2
Average	8.6	5.2

time between administration of tablet and recording of the first uterine contrac-

tion is given in Table V. The first contrac-

TABLE V
Interval Between Administration of Tablet and First Uterine Contraction

Time	Induction	Augmentation
Upto 15 min	24	18
16-30	16	6
31+	15	1
Average time	24.6	18.2

tion was recorded within 15 minutes in 24 cases of induction of labour and in 18 cases of augmentation of labour. The average time required to record the first uterine contraction was 24.6 minutes in cases for induction of labour and it was 18.2 minutes in cases for augmentation of labour. However, the time required for the onset of regular and satisfactory uterine contractions after administration of tablets was more. It was 48.2 minutes in induction of labour cases and 36.6 in cases for augmentation of labour. Regular and satisfactory pains were established in one hour in 76 per cent of induction of labour cases and in 92 per cent of the cases for augmentation (Tables V and VI). This means that it

TABLE VI
Interval Between Administration of Tablet and Regular and Satisfactory Uterine Contractions

Time in minutes	Induction	Augmentation
Upto 30	8	13
31-60	34	10
61-90	9	2
91-120	4	0
Average time	48.2	36.6

required only two tablets of desamino-oxytocin (100 units) to establish labour pains in majority of cases. Wespi *et al* (1966) required 100 units to establish labour pains in more than 50 per cent of their cases.

The labour was completed within 24 hours in majority of cases. In induction of labour cases, maximum duration of labour was 23 hours and minimum was 4½ hours with an average of 11½ hours. In augmentation cases, maximum duration of labour was 22 hours and minimum was 2 hours with an average of 6 hours. Labour was completed within 12 hours in 80 per cent of the cases of augmentation of labour as against 28 per cent in induction of labour cases. But at the end of 24 hours, labour was complete in 92 per cent of augmentation cases and 90 per cent of induction cases (Table VII). There

TABLE VII
Duration of Labour

	Induction	Augmentation
Maximum	23 hours	22 hours
Minimum	4½ hours	2 hours
Average	11½ hours	6 hours

TABLE VIII
Type of Labour

Type	Induction	Augmentation
Spontaneous	42	18
Vacuum or forceps	7	5
Failure	6	2

TABLE IX
Baby Weight

Weight	Induction	Augmentation
Upto 2000 G.	3	2
2001-2500 G.	12	4
2501+	40	19

TABLE X
Apgar Score

Upto 5	2
6-8	7
9+	63

were failures in induction series and 2 failures in augmentation cases. Sixty patients had spontaneous labour and 12

cases required forceps or vacuum application. Five babies weighed less than 2000 grams. Two babies had Apgar score less than 5. One of these babies died of respiratory distress syndrome on the third day. Both the babies were of mothers who had toxæmia of pregnancy and mothers had gone into spontaneous labour. Desaminooxytocin was given for uterine inertia. The death of the baby appears to be unrelated to the drug.

We did not encounter any complications in the third stage of labour. Berger encountered third stage complications in five per cent of his cases who were administered desaminooxytocin.

Summary and Conclusions

1. Desaminooxytocin was used transbuccally in 55 cases near term for induction of labour and 25 cases for augmentation of labour.

2. Regular and satisfactory uterine contractions were recorded in 48.2 minutes in induction cases and 36.6 minutes in augmentation cases.

3. Average number of tablets required for delivery were 8.6 for induction of

labour and 5.2 for augmentation of labour.

4. The average time taken between administration of tablet and delivery was 11½ hours for induction series and 4½ hours for augmentation series. At the end of 24 hours, labour was completed in 90 per cent of induction cases and 92 per cent of augmentation cases.

5. There were 6 failures in induction cases and 2 in augmentation cases.

6. No third stage complications were noted.

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