A COMPARATIVE STUDY OF INDUCTION AND ACCELERATION OF LABOUR BY INTRAVENOUS SYNTOCINON AND ORAL OXYTOCIN (BUCTOCIN)

By

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SUMMARY

We have studied 100 age matched cases prospectively to observe the behaviour of intravenous syntocinon and oral oxytocin on induction and acceleration of labour. We compared the therapeutic response with respect to mode of delivery, induction delivery interval, acceleration delivery interval and complications. We found that incidence of normal delivery was higher in oral oxytocin group as compared to intravenous syntocinon. Induction delivery interval was significantly ($P < 0.001$) less in oral oxytocin group as compared to syntocinon. Similarly acceleration delivery interval was significantly less ($P < 0.001$) in oral oxytocin group as compared to intravenous syntocinon in significant number of cases. There was no significant difference in incidence of complications in the two groups. Primi responded to oral oxytocin more than intravenous syntocinon for induction of labour while multi responded to intravenous syntocinon better than oral oxytociu. No significant difference ($P < 0.1$) was found in acceleration of labour by either ones.

Introduction

The transcedent object of obstetrics is that every pregnancy must culminate in a healthy mother and baby. At times the obstetrician is often forced to consider termination of pregnancy, when conditions are not favourable to mother and foetus, needing early and safe induction and acceleration of labour.

Material and Methods

We did a prospective study of 100 age matched cases to observe comparative behaviour of intravenous syntocinon and oral oxytocin on the induction and acceleration of labour and compared under similar conditions to 100 pregnant women at or near term. We divided cases into four groups.

1. In first group: 25 Cases were given intravenous syntocinon for induction of labour.
2. In second group: 25 Cases were given oral oxytocin for induction of labour.
3. In third group of labour: 25 cases were given intravenous syntocinon for acceleration of labour.

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4. In fourth group of labour: 25 Cases were given oral oxytocin (buctocin) for acceleration of labour.

Intravenous syntocinon was given in doses of 0.5 units mixed in 500 cc of 5% GDW by slow infusion and dose titrated according to response of uterine contraction; maximum upto 10 mU/min. for acceleration of labour and for induction of labour upto 30-40 mU/min.

Observations

Table I shows that normal delivery was more frequently (60%) seen in oral oxytocin group as compared to intravenous syntocinon (48%) group. Induction delivery interval was 4-6 hours in 28% cases of oral oxytocin as compared to 8% cases of intravenous syntocinon and similarly 76% cases delivered within 12 hours in contrast to 56% cases of intravenous syntocinon group showing statistical significance ($P < 0.001$). About half of the patients (44%) of intravenous syntocinon group had long induction delivery interval (more than 12 hours) as compared to 25% of oral oxytocin. Foetal outcome was equally good in both groups, but foetal distress was more frequently in intravenous syntocinon group as compared to other complications.

Table II shows that there was no difference in mode of delivery in either group. Labour was accelerated to terminate in delivery within 6 hours in 52% cases of oral oxytocin as compared to 24% cases of intravenous syntocinon, while with the

TABLE I

Profile of Behaviour of Intravenous Syntocinon and Oral Oxytocin on Induction of Labour

S. No.	Parameter	I.V. Syntocinon	Oral Oxytocin
1.	Age in years Upto 30	24	25
	More than 30	1	—
2.	Parity: Primi	15 (60%)	13 (52%)
	Multi	10 (40%)	12 (48%)
3.	Mode of delivery		
	— Normal	12 (48%)	15 (60%)
	— Forceps	2	1
	— Caesarean	11	9
4.	Induction delivery interval		
	0-2 Hrs.	—	—
	2-4 Hrs.	—	3 (12%)
	4-6 Hrs.	2 (8%)	4 (16%)
	6-8 Hrs.	2 (8%)	3 (12%)
	8-12 Hrs.	10 (40%)	9 (36%)
	12-16 Hrs.	9 (36%)	3 (12%)
	16-24 Hrs.	2 (8%)	3 (12%)
5.	Apgar Scoring		
	0-5	—	—
	6-8	5	3
	9-10	20	22
6.	Complications	12 (48%)	7 (28%)
	Foetal distress	4	1
	Rigors	3	—
	Postpartum haemorrhage	5	4
	Nausea & Vomiting	—	2

TABLE II

Profile of Behaviour of Intravenous Syntocinon and Oral Oxytocin on Acceleration of Labour

S. No.	Parameter	Intravenous syntocinon	Oral oxytocin
1.	Age in Years Upto 30	24	24
	More than 30	1	1
2.	Parity — Primi	20	15
	— Multi	5	10
3.	Mode of Delivey		
	— Normal	22	22
	— Forceps	3	3
	— Caesarean	—	—
4.	Acccleration delivery interval		
	— 0-2 Hrs.	—	—
	2-4 Hrs.	2 (8%)	4 (16%)
	4-6 Hrs.	4 (16%)	9 (36%)
	6-8 Hrs.	11 (44%)	2 (8%)
	8-12 Hrs.	5 (20%)	10 (40%)
	12-16 Hrs.	3 (12%)	—
	16-24 Hrs.	—	—
	More than 24 Hrs.	—	—
5.	Apgar Scoring		
	0-5	—	—
	6-8	1	—
	9-10	24	25
6.	Complications	8 (32%)	4 (16%)
	— Foetal distress	3	—
	— Rigors	3	—
	— Postpartum haemorrhage	—	2
	— Nausea & Vomiting	2	2

passage of time there was no further increase in number of cases to deliver early as compared to either group. Foetal outcome was equally good in either group but foetal distress was more common in intravenous syntocinon cases.

Table III shows that primi responded to oral oxytocin (70%) more than intravenous syntocinon (42%) for induction of labour while multi responded to intravenous syntocinon (80%) better than oral oxytocin (60%) for induction. The total induction of labour responded to oral oyytocin was more than intravenous syntocinon. There was no significant difference ($P < 0.1$) in effect of either medicine on acceleration of labour.

Discussion

Our results conclude that induction delivery interval was found to be shorter in oral oxytocin than intravenous syntocinon group irrespective of indications. 28% cases of oral oxytocin as compared to 8% cases of intravenous syntocinon had induction delivery time less than 6 hours, also 76% of oral oxytocin as compared to 56% of intravenous syntocinon had induction delivery interval less than 12 hours. Our results are similar to Waspi *et al* (1966), Harshey *et al* (1977) and DeJager (1970) but much lower to those reported by Gupta *et al* (1976) and Orrhue *et al* (1984). Intravenous syntocinon and oral oxytocin had

TABLE III—*Showing Clinical Efficacy of Intravenous Syntocinon and Oral Oxytocin Therapy*

Parity	Induction of Labour				Acceleration of Labour			
	I.V. Syntocinon		Oral Oxytocin		I.V. Syntocinon		Oral Oxytocin	
	No. of Cases	Success %	No. of Cases	Success %	No. of Cases	Success %	No. of Cases	Success %
Primi	15	6 (42%)	13	9 (70%)	19	19 (100%)	15	15 (100%)
Multi	10	8 (80%)	12	7 (60%)	6	6 (100%)	10	10 (100%)
Total	25	14 (56%)	25	16 (64%)	25	25 (100%)	25	25 (100%)

similar complications in induction and acceleration except higher incidence of foetal distress in intravenous syntocinon cases as compared to oral oxytocin.

52% cases of oral oxytocin had acceleration delivery interval less than 6 hours as compared to 24% cases with intravenous syntocinon ($P < 0.001$) irrespective of indications while with prolongation of labour, the effect of oral oxytocin and intravenous syntocinon had similar results. Oral oxytocin and intravenous syntocinon had similar results on acceleration of labour in primi and multi. Our results are similar to Brockler *et al*, 1970.

Hence it is concluded that oral oxytocin is more effective than intravenous syntocinon for induction and acceleration of labour. Moreover it avoids the discomfort of drip and drip related complications and keeps the patients mobile and the acceptability of the patient is 100%.

References

1. Brockler, H., Obolensly, W. and Rehsteiner, H. P.: Lecture delivered during VI World Congress of Gynaec. Obstet., New York 1970.
2. Gupta, S. D. and Godh, S.: J. Obst. Gynaec. India. 26: 816, 1976.
3. DeJager, J. J.: S. Afa. Med. J. 44: 1033, 1970.
4. Harshey, A. D., Gupta, A. N. and Mathur, V. S.: J. Obst. Gynaec. Ind. 27(2): 146, 1977.
5. Orrhue, A. E., Unuigbe, J. A., Ezimokhai, M. and O Jo, V. A.: J. Obst. Gynaec. Ind. 64: 108, 1984.
6. Waspi, H. J., and Rhesteiner, H. P.: Gynaecologia. 162: 414, 1966.