Gynaecology

"Effect of late dinner on the onset of labour pain: observational case -control study"

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ABSTRACT

Objective : To establish a co relation between consumption of late dinner and the onset of labour pains during day time(7am to 7 pm).

Design: Main research article

Setting: Outpatient, Dhiraj Hospital , Gujarat , India.

Sample: 285 sample size (study group-142 and control group-143)

Methods: Patients were selected as per the inclusion criteria & were subdivided into study and control groups ,according the computer generated randomized number. Study group patients were counselled to have dinner late by 3 hours than their usual dinner time, after 34 weeks of gestation and these patients were followed up till delivery.

Main Outcome Measures : Chi Square test(p value), Relative Risk(RR)

Results : In this study ,73.23% patients from the study group developed labour pain between 7 am to 7 pm (day time). In control group, 48.25% patients started labour pain during day time.(P value : <0.001, RR-1.518).In our study, 61.97% of deliveries from the study group occurred during day time.(P value 0.0044;RR-1.38)

Conclusions: We could infer from this study that there is a positive association between consumption of dinner late at night and onset of labour pain during day time, which was more evident in multigravidae. Also there is a positive association between consumption of dinner late at night and day time deliveries. Since this is a pilot study, more studies with a larger sample size are required to validate this proposition.

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INTRODUCTION

The importance of assessing and estimating the time of delivery has been recognised for almost centuries. Although the indications have clearly changed during the past 200 years from a need to expel a foetus to reduce the fetal or maternal health problems, effective and safe methods of achieving delivery. Induction of labour by other than medical methods are like frequent walking, vaginal intercourse, participating in heavy exercise, consumption of laxatives, spicy foods or herbal tea, nipple stimulation and administration of an enema.[1](Schaffir 2002). Less well-known approaches include taking a hot bath, dancing, eating Chinese food, drinking warm gin or cranberry juice, and riding a car over a bumpy road.[1]

In this study we are particularly focused on the food intake pattern with the onset of labour pain in human beings.

Previously, the concept was to conduct a delivery at day time which could provide ease of assistance in complicated labour and delivery and get good maternal and fetal outcome. There have been very few studies or a research regarding association of food intake pattern with onset of labour pain in animals, while there has been no study regarding the same in human being.

It is pilot study about effect of late dinner on the onset of labour pain in human beings.It becomes important to study about relationship between diet pattern and onset of labour pain, with small intervention make big difference in the maternal and fetal outcome.

Castor oil , was first noted to have properties to initiate labour by ancient Egyptians, one and remained a very popular stimulant for the induction of labor until the mid-1950s when taken orally.[2]

As Diarrhoea is also know to induce the preterm labour pain, there might possibly be some co- relation between the GIT system with Uro-genital system, as they are of the same origin of germinal cell.

Various studies on relation between the food pattern and the labour time have been done in animals, one of them is mentioned below.In the most convincing study to date, 1,331 cows on 15 Iowa farms were fed once daily at dusk. That protocol resulted in 85 percent of the calves being born between 6:00 a.m. and 6:00 p.m. It did not seem to matter whether pregnant cows were started on the night feeding the week before calving began in the herd or two to three weeks earlier. Either procedure resulted in more daytime births, which also led to more live births. Researchers concluded that the easiest and most practical method of inhibiting night time calving is by feeding pregnant cows at dusk or during early night time hours.[3]

Method

This study was done in Dhiraj General Hospital, SBKS medical institute and research centre, Baroda ,Gujarat .It is prospective interventional study.

The patients were selected as per inclusion criteria and allocation of patients in the both groups was done as per a computer based randomization method. These patients were chosen from those who

attended the obstetrics and gynecology OPD in the one month of study period. 142 cases were selected as per computer numbering and these women (study group) were advised to have dinner 3 hours late from their usual time of dinner. Another 143 patients were selected as control group. Follow up was taken of all included patients.

Inclusion criteria:
1) Primigravida or multigravida who likely to have vaginal delivery.
2) Gestational age more than 34 weeks either by last menstrual period or sonographically.
3) Case and control group on computerized randomization number.

Exclusion criteria:
1) Pregnancy associated with any high risk condition like PIH, Diabetes ,Anemia, multiple gestation.
2) Pregnancy with previous cesarean section or other complication.
3) Gestational age less than 34 weeks.

OBSERVATIONS & RESULTS
In our study we have analyzed 142 patients in study group and 143 patients in control group and the results are as below:

In this study ,table No 1 shows that out of 142 study group,104 (73 .23%) patients developed the onset of labour pain during the day time (7 am to 7 pm) which is statistically significant .On the contrary, only 69(48.25 %) patients, out of 143 in the control group developed the onset of labour pain during day time.(Figure No 1)

		Study Group (n=142)	Control Group (n=143)	Total	Grand Total
Onset of labour pain	7 AM to 7 PM	104 (73.23 %)	69 (48.25%)	173	285
	7 PM to 7AM	38 (26.77 %)	74 (51.74%)	112	
Total		142	143		

Chi Square - 18.644, DOF- 1 , P value <0.0001 (extremely significant), Risk Ratio 1.518

Table No:1 Initiation of labour pain in the study and control group
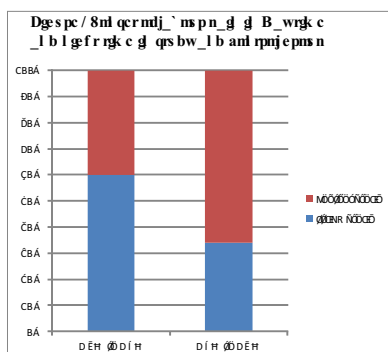
In our study, Table No 2 shows that in the study group, 88(61.97 %) out of 142 patients delivered during the day time(7 am to 7 pm) which was found to be statistically significant . In the control group only 64(44.75 %) out of 143 delivered in between 7 am TO 7 pm(Day Time)(Figure No 2).

We then tried to assess the onset of labour pain in the primigravida and multigravida patients in the study and control groups separately.

Table No 2 : Time of Delivery in the study and control group

		Study Group	Control Group	Total	Grand Total
Time of Delivery	7 AM to 7 PM	88 (61.97%)	64 (44.75%)	152	285

7 PM to 7AM	54(38.03%)	79(55.25%)	133	
Total		142	143	285	

Chi Square 7.808, DOF- 1 ,P value - 0.0044 (significant), Risk Ratio 1.385
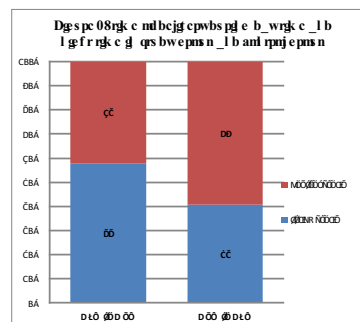
In Primigravida, Table no 3 shows us that out of 32 primigravidae in the study group, 19(59.37%) had an onset of labour pain during day time (7 am to 7 pm) and in the control group,20(51.28 %) patient out of 39 primigravidae had onset of labour pain in day time(7 am to 7 pm). No statistically significant relation could be drawn here.

Table No:3 In primigravida the Onset of labour pain in the study and control group

In Primigravida		Study Group	Control Group	Total
Onset of Labour pain	7 AM to 7 PM	19 (59.37 %)	20 (51.28%)	51
	7 PM to 7AM	13 (40.63%)	19 (48.71%)	32
Total		32	39	

Chi square 2.45 , DOF 1 , p value 0.11 (not significant) **Risk Ratio 1.158**

Table no 4 shows us that out of 98 multigravidae in the study group, 73 (66.36%) had an onset of labour pain during day time (7 am to 7 PM) and in the control group, 49(47.11%) patient out of 104 multigravidae had onset of labour pain in day time. there is statistically significant relation could be drawn here.

Table No: 4 In multigravida ,Initiation of labour pain in the study and control groups

In multigravida		Study group	control group	Total
Onset of labour pain	7 AM to 7 PM	73(66.36)	49(47.11%)	122
	7 PM to 7AM	25(33.64%)	55(52.89%)	80
Total		98	104	

chi Square 14.68 , DOF 1, p value <0.0001 (significant) Risk Ratio - 1.581

In my study, Table no 5 shows that in the study group, 114(80.02 %) out of 142 delivered by vaginal route and remaining 28(19.98 %) delivered by caesarean section. In the control group, 109(76.22 %) out of 143 delivered by vaginal route and remaining delivered by the caesarean section which has no statistical significance.

Table no: 5 : Distribution of the mode of delivery in the study and control group

Route of delivery	Study group	Control Group	Total
Vaginal delivery	114(80.02 %)	108 (75.53%)	223
Abdominal(LSCS)	28(19.98%)	35 (24.47%)	62
Total	142	143	285

P value =0.4732 (Not statistically significant)

Table No 6 shows us that out of 142 patients in the Study group;

4(2.82%) patients required NICU admission and in the Control group; 13(9.09%) out of 143 patients required an NICU admission Irrespective of time of delivery.(P value - 0.01267;significant)

Table No 6 : NICU admission in study and control group

		Study group	Control group
NICU admission	Yes	4 (2.82 %)	13 (9.09 %)
	No	138 (97.18 %)	130 (90.91%)
		142	143

Chi squared =3.944 with DF=1 ,P value equals 0.01267 (statistically significant)

Discussion

In this study, a total of 285 patients were analyzed by dividing them into study (142) and control (143) group.

In my study, 73.23% patients from the study group developed labour pain between 7 am to 7 pm (day time) . In control group, 48.25% patients started labour pain during day time.(P value : <0.001, with Relative Risk of 1.518)

These patients were further divided into primigravidae and multigravidae.

In primigravidae, 59.37% patients from study group had labour pain during day time.(P value 0.11 not significant ; relative risk 1.158)

In multigravidae, 66.36% patients from study group started labour pain during 7 am to 7 pm.(P value <0.001,Significant ; relative risk 1.581)

This shows that there is a 1.5 times more chance of developing labour pains from 7 am to 7 pm in patients having late dinner as compared to the other patients. Furthermore, this chance is significantly higher in multigravida patients as compared to primigravida patients.

In our study, 61.97% of deliveries from the study group occurred during day time. While 44.75% from the control group occurred during day time. P value 0.0044 (significant) and Relative risk of 1.38 suggesting higher likelihood of day time deliveries. This outcome is rather beneficial as during day time , there are better chances of monitoring , easy availability of senior consultants , resources, staff and ease of performing any operative intervention if necessary.

In a study from Montana done on cows, concluded that the nighttime calvings (10:00 p.m.- 6:00 a.m.) were reduced from 33.3 percent for 334 early fed cows to 22.8 percent for 347 late fed cows. Late fed cows were fed 5:00-6:00 p.m. In a survey of 15 Iowa cow/calf producers, 85.1 percent of 1331 late fed cows calved from 6:00 a.m. to 6:00 p.m. while 49.8 percent of 695 early fed cows calved during the same 12-hour period.[4]

Results at the Dickinson Branch Station support late feeding as a method of increasing daytime calving. At the Dickinson Station 71.1 percent of late fed cows calved between 8:00 a.m. and 8:00 p.m. while 25.3 percent were born between 12:00 noon and 2:00 p.m. providing feed in the late afternoon to spring-calving beef cows may result in a greater number of calves born during daylight hours, which could assist producers in reducing mortality associated with dystocia due to lack of herdsman assistance during night-time hours.[5]

Out of all the deliveries, in study group, 80.02% patients delivered vaginally and 19.98% by Cesarean section . In control group, 75.53% patients delivered vaginally while 24.47% by Caesarean section (P value 0.473,not significant).So this shows that there is no statistically significant change in the mode of delivery due to the timings of dinner in the patients.

But, the NICU admission in study group was 2.82% while in control group was 9.09% (P value 0.01267).So this shows that there is a

significant decreased rate of NICU admissions in the study group,

Although no logical reasoning can back the hypothesis that late dinner has a bearing on neonatal outcome or NICU Admission, but a significant positive correlation was found between the two ,in this study. Hence, further studies need to be carried out to see if there is any correlation or not.

The few limitation are faced during the study were
a) since this was a pilot study, a larger sample size was not studied upon. b) the amount of food intake could not be measured as its varies with each person and it's not possible to keep track of it in out patients.

CONCLUSION

We could infer from this study that there is a positive association between consumption of dinner late at night and onset of labour pain during day time, which was more evident in multigravidae. Also there is a positive association between consumption of dinner late at night and day time deliveries. Since this is a pilot study, more studies with a larger sample size are required to validate this proposition.

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