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CHANGING TRENDS IN INDICATIONS OF CAESAREAN SECTIONS (A COMPARATIVE STUDY)

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ABSTRACT:

INTRODUCTION: *Women are now four times more likely to have caesarean birth than 30 years ago.2 The reasons for this increase in caesarean birth are multifactorial and most important is increasing number of women with prior caesarean delivery.*
The purpose of this study was to compare the frequency of caesarean section rate in past and recent years and to find out the changes in indications of caesarean section in recent years.
STUDY DESIGN: *Retrospective, comparative study.*
PLACE AND DURATION: *Department of Obstetrics and Gynaecology unit iii, civil hospital Karachi, from 1997 to 2004.*
PATIENTS AND METHODS: *This study was conducted in year 2004 in gynaecology and obstetrics department, unit 111 civil hospital Karachi. This was a retrospective, comparative study in which two year data i.e. of 1997 (group 1) and 2004 (group 2) was collected from the hospital record. Both groups were compared for caesarean section rate, and trends of indications of caesarean section.*
RESULTS: *The rise in caesarean section rate was seen upto 4.4% in 2004 as compared to 1997. Amongst the statistics of year 2004, the drastic increase in the rate upto 9.96% was seen due to previous one caesarean section and associated problems e.g. scar tenderness*
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KEY WORDS: Caesarean section, frequency, indication.

INTRODUCTION:

Of the profound alterations in the practice of obstetrics over the past century, one of the most apparent has been the progressive increase in the frequency of caesarean delivery. The safety of lower uterine segment technique, the evolution of anesthetic proficiency, the availability of blood products and antibodies, the broadening of indications for operation, the recognition of the fetus as patient, the feasibility of vaginal birth following caesarean section and acceptance of this procedure by women have characterized the evolution of caesarean birth in twentieth century. These factors have all contributed to the rise in the incidence of caesarean birth over the past 50 years.[1] Women are now four times more likely to have caesarean birth than 30 years ago.[2]
The reasons for this increase in caesarean birth are multifactorial and include the increasing number of women with prior caesarean delivery, the increase in multifetal gestations, use of intrapartum electronic fetal monitoring, changes in obstetric training, medicolegal concerns, alterations in parental and societal expectations of pregnancy outcome, and maternal autonomy in decision – making regarding delivery mode.[1]
The purpose of this study was to compare the frequency of caesarean section rate in past and recent years and to find out the changes in indications of caesarean section in recent years.

PATIENTS AND METHODS:

This study was conducted in year 2004 in gynaecology and obstetrics department, unit 111 civil hospital Karachi. This was a retrospective, comparative study in which two year data i.e. of 1997 and 2004 was collected from the hospital record.
All the patients admitted in Gynae Unit III in 1997 and 2004, of any age and parity, delivered vaginally or through caesarean section after 20 weeks of gestation were included in the study. The patients were divided into two groups. The patients delivered in 1997 (Group I) and delivered in 2004 (Group II). Both groups were compared for caesarean

section rate, and trends of indications of caesarean section.
The statistical data was analysed SSP version 10.

RESULTS:

The total number of patients delivered in 1997 and 2004 were 1211 and 1978 respectively. Frequency of caesarean section noted was 36.49% (n=442) in 1997 and 40.89% (n=809) in 2004. Comparing with year 1997, the rise in caesarean section rate was seen upto 4.4% in 2004.
Amongst the statistics of year 2004, the drastic increase in the rate upto 9.96% was seen due to previous one caesarean section and associated problems e.g. scar tenderness (Table II). The group of rare indications increased the rate upto 2.6%.
Main indications of doing caesarean section in 1997 were cephalopelvic disproportion, Non-progress of labor, fetal distress, obstructed labor, previous two or more caesarean sections and placenta previa. A significant decline noted in caesarean section upto 7.93% due to cephalopelvic disproportion, 9.6% due to Non-progress of labor and 5.6% due to fetal distress.

DISCUSSION:

For the last 30 years, there has been a public health concern about increasing caesarean section rates. The increase has been a global phenomenon, the timing and rate of increase has differed from one country to another and marked differences in rates persists. In 1985, the World Health Organization issued a consensus statement suggesting there were no additional health benefits associated with a caesarean section rate above 10-15%.[3]
The rise in caesarean section rate was seen upto 4.4% in year 2004 (Table I).the frequency noted in 1997 was 36.49%, increased upto 40.89% in 2004. Haider G et al from hyderabad pakistan and shamshad from abbottabad also reported c-section rate as high as 67.7% and 45.1% in year 2007, respectively.[4,5] Similar rise was seen throughout the world as Rutkow IM reported caesarean section delivery, 21% of all live births in United States in 1984, this rate increased upto 24.4% in 2001 as reported by Martin JA. et al. [6,7] In 1980, the rate in England was 9%, increasing to 21.3%, in 2000.[8,9] Similar facts reported by Murray SF and Serani Pradenas F, regarding caesarean births in Chile, the incidence increased from 27.7% in 1986 to 37.2% in 1994.[10] In Brazil reaching upto 50% in some areas.[11] Dinas K et al reported caesarean delivery rate of 35.5% in 2006 in a teaching hospital of Northern Greece.[12]

TABLE I:
THE RATE OF CAESAREAN SECTIONS

YEAR	No. OF LIVE BIRTHS	NO. OF C/SECTIONS	%
1997	1211	442	36.49
2004	1978	809	40.89

TABLE II:
COMPARISION OF INDICATIONS (1997 VS 2004)

INDICATIONS	1997 (Group 1)	2004 (Group II)
Primi breech	(17) 3.84%	(28) 3.41%
Multi breech	(9) 2.03%	(16) 1.97%
Previous 1 C/S	(14) 3.16%	(121) 14.95%
Previous C/S >1	(47) 10.63%	(141) 17.42%
CPD	(49) 11.08%	(40) 4.94%
Obstructed labor	(44) 9.95%	(71) 8.77%
Fetal distress	(53) 11.9%	(75) 9.27%
Non Progress Of Labor	(50) 11.31%	(27) 3.33%
Placenta previa	(49) 11.08%	(69) 8.52%
Abruptuio placenta	(8) 1.80%	(11) 1.35%
Precious pregnancy + BOH	(30) 6.78%	(48) 5.93%
Malpresentation	(16) 3.61%	(19) 2.34%
PIH / Eclampsia	(17) 3.84%	(52) 6.42%
IUGR	(2) 0.45%	(2) 0.24%
Ruptured uterus	(17) 3.84%	(8) 0.98%
Twin breech	(5) 1.13%	(6) 0.74%
Cord presentation / prolapse	(2) 0.45%	(4) 0.49%
Chorioamnionitis	(8) 1.80%	(27) 3.33%
Post date / term with another associated risk factor	(1) 0.22%	(9) 1.11%
Diabetes mellitus	(3) 0.67%	(5) 0.61%
RARE INDICATIONS		
Surgically corrected chronic inversion	(1) 0.22%	(2) 0.24%
Failed induction	(0) 0%	(4) 0.49%
H/O accidentally opened uterine cavity during myomectomy	(0) 0%	(1) 0.12%
H/O repaired uterine perforation	(0) 0%	(1) 0.12%
Gross congenital anomaly of baby	(0) 0%	(3) 0.37%
Retained 2nd twin	(0) 0%	(1) 0.12%
Hand prolapse	(0) 0%	(1) 0.12%
Cardiac disease	(0) 0%	(1) 0.12%
TWIN + Previous 1 C/S	(0) 0%	(2) 0.24%
Pelvic deformity	(0) 0%	(1) 0.12%
3 deg perineal tear	(0) 0%	(4) 0.49%
No clear indication found in the record	(0) 0%	(9) 1.11%

This was also found to be upto 21.59% in a military hospital of Tunis.[13]

In our study, the caesarean section rate due to one or more than one caesarean sections was found to be more than double i.e. 13.79% in 1997 and 32.37% in 2004. Approximately one third caesarean sections were done due to previous one caesarean section and associated factors like scar tenderness, finding consistent with finding of Haider G from Hyderabad Pakistan and Qazi GR from Peshawer Pakistan, reported repeat c-section, in 19.2%, 29.87% of cases, respectively.[4,14] Najmi RS and rehan N from Lahore Pakistan also found repeat c-section (5.8%), one of the three leading indications of c-section.[15] Lubna Ali from Karachi Pakistan reported repeat c-section, the commonest indication of c-section.[16] Similar indication was reported in 30.9% of the cases by Dinas K et al from Northern Greece, 34% by Messaovdi F et.al from Tunis, 43.3% - 45.5% by HSu CY et.al from Taipei, Taiwan, 45.5% by Hager R et al from Norway.[12, 13, 17, 18]

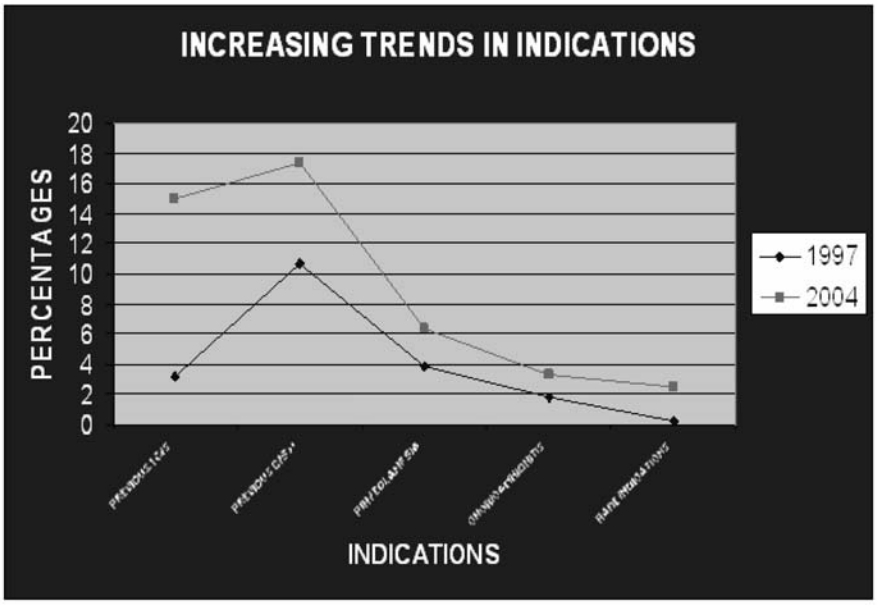
Civil hospital is a tertiary care hospital of the city dealing with large number of referred cases and providing obstetric care free of cost. This is one of the important reasons for increasing number of repeated caesarean sections in our department.

Caesarean section rates due to severe preeclampsia and eclampsia were found to be increased upto 2% in 2004 as compared to 1997, probably due to late referral to the tertiary care hospital and lower threshold of obstetrician for caesarean delivery.

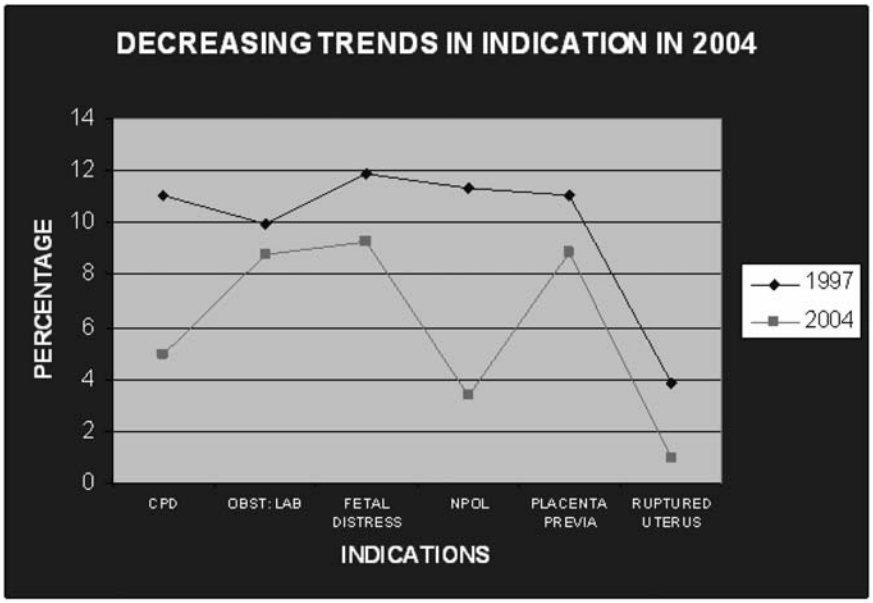
The group of rare indications like previously surgically corrected chronic inversion, previous myomectomy, previously repaired uterine perforation, congenital anomaly of fetus unable to deliver vaginally, pelvic deformity and previously repaired third degree perineal tear raised the caesarean rates upto 2.6% in 2004. The reason is increased awareness of doctors and high expectations of patients regarding obstetrical outcome

The major decline seen in caesarean births due to non-progress of labor upto 7.98%, cephalopelvic disproportion upto 6.14% and fetal distress upto 2.63% in this study in 2004 (graph II). Similar findings reported by Dinas K et al found significant decrease for non-reassuring or pathological fetal heart rate trace by cardiotocography (-39.1%, p=0.008).[10] Messaoudi F et al reported cicatrical uterus constitutes the dominant indication (34%) followed by fetal suffering (24.7%), failure of trial of labor (14.2%) and breech presentation (12.7%), a finding, partly correlates and partly does not correlate with our findings. [13]

GRAPH 1: (1997 vs 2004)



GRAPH 2: (1997 vs 2004)



Caesarean section due to breech presentation was found 1% less in year 2004, probably a finding by chance.

Florica M etal from Sweden reported suspected fetal distress (+1.6, p=0.001) maternal request (+1.5%, p<0.0001) and labor dystocia (+0.8%, p=0.03) were associated with the increased in caesarean section rates, findings which does not correlate with our findings.[19] Similar findings reported by Lubna Ali Karachi pak, shamshad abbottabad pak and Sultana A from Abbottabad pak, found obstructed labor and fetal distress the second and third common causes of c-section.[5,16,20]

Patient's awareness about decreased fetal movements and Improvement in the obstetric care in recent years could be the main reasons for the decline seen in our study due to cephalopelvic disproportion, fetal distress, obstructed labor and non-progress of labor.

A point about data collection on caesarean section is that not only is the number of caesarean section performed important, but also, crucially, weather they have been performed on the right women at the right time and in an acceptable manner. Accurate collection of data on caesarean sections and

the indications has to be continually emphasized. The aim should not be to worry weather the caesarean section rate is too high or too low, but rather what is the rate and why? it can be considered to be appropriate, taking into consideration all the relevant outcome factors.[21]

The caesarean section rate is an important target but should never be the only target and therefore never considered in isolation.

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