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A retrospective one year study on primary caesarean section at Aswan University hospital in Upper Egypt

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Abstract
Introduction: "Every effort should be made to provide caesarean sections to women in need rather than striving to achieve a specific rate" WHO Statement (2015) Since1990 to 2014, the overall worldwide absolute increase in the CS rate was 12.4% with an estimated average annual increase in rate of around 4.4%.
Methods: This retrospective study was conducted at Department of Obstetrics and Gynaecology Aswan University, Aswan, Egypt.The study period was from January 2018 - December 2018. Data was recorded, master chart framed and a statistical analysis of various parameters- age, parity, period of gestation, and indications for CS in primigravida/multigravida/overall, was done to find out the rate and trend of CS in our hospital.
Results: During the study period (January 2018, to December2018) a total of 3852 patients were delivered and 2400(67%) patients had vaginal delivery, 1452 (37.69%) patients had undergone caesarean section and 712(18.48%) patients had undergone primary caesarean section. The most common indication for primary CS were foetal distress 25% followed by Failed induction 17.83%. (77.52%) of caesarean section were done at term gestation. (10.25%) patients had undergone primary caesarean section at <37 weeks of gestation while 12.21% cases were post-dated pregnancies.
Conclusion: CS rates have increased primarily due to foetal distress followed by Failed induction. To reduce the rate of CS the rate of primary CS needs to be reduced by proper selection of patient for CS for indications like foetal distress, non-progress of labour.

Keywords: Incidence, CS, primary CS

Introduction

"Every effort should be made to provide caesarean sections to women in need rather than striving to achieve a specific rate" WHO Statement (2015) [1].

Caesarean section (CS) is a commonly performed operative procedure in modern obstetrics, the rates of which are increasing by time [2].

CS delivery is defined as an operative procedure to deliver the fetus or foetuses after the period of viability through an incision on the abdominal wall and uterine wall in an intact uteruin wall [3].

Since1990 to 2014, the overall worldwide absolute increase in the CS rate was 12.4% with an estimated average annual increase in rate of around 4.4%. This alarming scenario which has gained the attention of obstetricians, healthcare providers and planners alike, is justified. However, attaining lower cesarean section rates should not cause patient neglect. While all possible perspectives for reduction of caesarean rates should be encouraged [2].

The National Institute of Health and Care Excellence NICE guidelines and RCOG guidelines recommend that elective CS should not routinely be carried out before 39 weeks of pregnancy [4].

The definition of primary CS is CS performed in a patient who has not undergone any prior cesarean section. A lot of emphasis has been placed on the concept of Vaginal Birth after Caesarean section and of CS in general. However, the group of multigravida patients (with prior vaginal delivery only) undergoing primary CS has not received particular attention [5].

The tertiary care hospitals have high CS rates but areas where health care facilities are not available may have maternal deaths due to lack of CS facilities. It would therefore helpful to assess CS rates in tertiary health care facilities which could be in some way be representative of CS rates of the population catered by that hospital [6].

Aim of this study was to find out the caesarean section and primary CS rate in our hospital, to identify the reason for the rise in caesarean section rate and to identify areas where CS rates can be reduced.

Methods

This retrospective study was conducted at Department of Obstetrics and Gynaecology Aswan University, Aswan, Egypt

The study period was from January 2018 - December 2018. A total caesarean deliveries were analyzed from the data on the case sheets, operation registers and new born records after approval from research committee of the hospital. Maternal data collected included the age, parity, booked or unbooked cases, procedure, indications and post-

operative complications. All data were computed and analyzed. Data was recorded, master chart framed and a statistical analysis of various parameters- age, parity, period of gestation, and indications for CS in primigravida/ multigravida/ overall, was done to find out the rate and trend of CS in our hospital.

Inclusion criteria

• All the women delivered by CS during that period of time from 1st Jan 2018 to 31st December 2018, irrespective of birth outcome were included in the study.

Exclusion criteria

• Incomplete record forms or case papers with inadequate details were excluded from the study.

Statistical analysis

All data of patients who delivered by CS in our hospital during the defined study period was recorded and a statistical analysis of various parameters namely, the CS rates, its indications, the patient's complications was done. Categorical and continuous variables are expressed as number (percentage) and mean±standard deviation respectively.

Results

During the study period (January 2018, to December2018) a total of 3852 patients were delivered and 2400(67%) patients had vaginal delivery, 1452 (37.69%) patients had undergone caesarean section and 712(18.48%) patients had undergone primary caesarean section.

Table 1: Distribution of cases according to mode of delivery.

T Mode of delivery. ype of delivery	NnnnmvyuNumbersmber	Percentage
Vaginal delivery	2400	67%
Caesarean section	1452	37.69%
Total delivery	3852	100

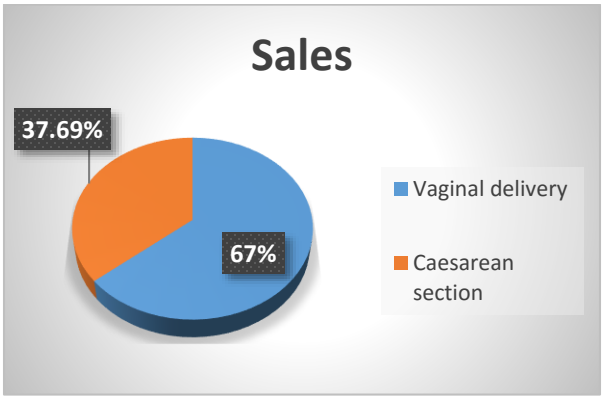

Fig 1

Table 2: Age of patients with primary caesarean section.

Age of patients	Number	Pi%5ncercentage
<25 years	55	7.72%
26-30 years	212	29.75%
31-35 years	279	39.18%
35-40years	130	23.31%
>40years	36	5.05%
Total	712	100%

As regard age of patients with primary caesarean section 7.72% <25 years, 29.75% of them between ages26-30 years, 39.18% of them between ages 31-35 years, 23.31% of them between ages and 5.05%>40years

Table 3: Parity of patients with primary caesarean section.

Parity of patients	Number	Incidence
Prim gravida	370	51.96%
Multipara	225	31.60%
grand multipara	117	16.43%
Total	712	100%

As regard parity of patients with primary caesarean section

31.60% of patients were multipara, while 51.96% of patients were primigravida, and 16.43% of patients were grandmultipara

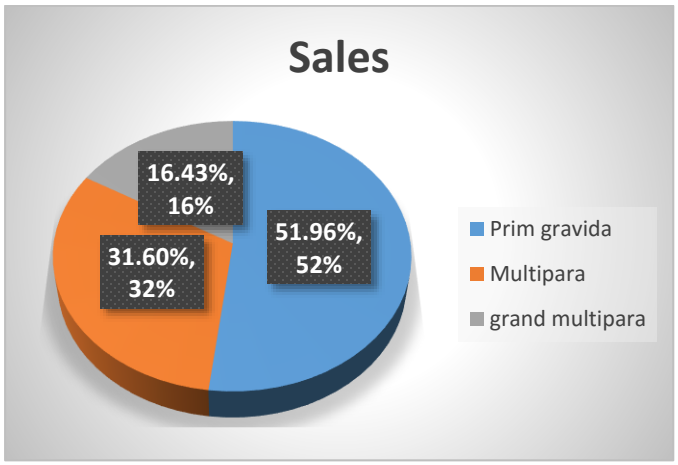

Fig 2

Table 4: Gestational age of patients with primary caesarean section

Gestational age	Number	Incidence
Preterm (<37weeks)	73	10.25%
37 -40 Weeks	552	77.52%
Postdate(>40wks)	87	12.21%
Total	712	100%

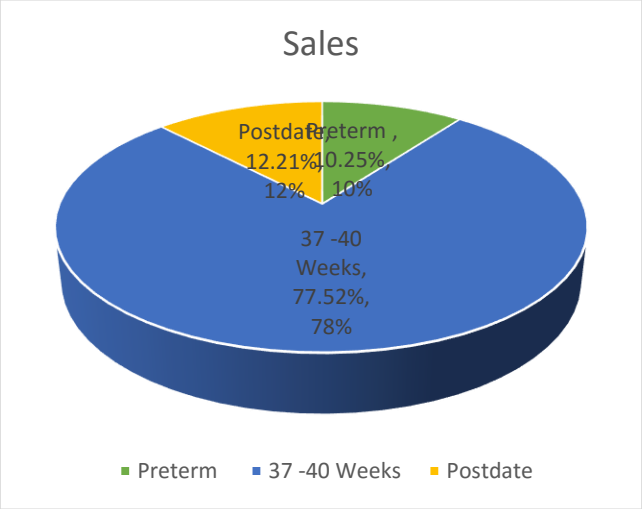

Fig 3

As regard **g**estational age of patients with primary caesarean section majority (77.52%) of caesarean section were done at term gestation. (10.25%) patients had undergone primary caesarean section at <37 weeks of gestation while 12.21% cases were post-dated pregnancies.

Table 5: Indications of CS among patients with primary caesarean section

Indication	Number	Incidence
Fetal distress	178	25%
Non-progress of labour	122	17.13%
Cephalopelvic disproportion	55	7.62%
Breech	35	4.91%
severe preeclampsia eclampsia /	67	9.41%
Multifetal gestation	48	6.74%
Failed induction	127	17.83%
IUGR	80	11.23%
Total	712	100%

Table 7: Maternal morbidity among patients with primary caesarean section

Item	Number	Incidence
Puerperal pyrexia	155	21.76%
Surgical site infection	71	9.97%
PPH	86	12.07%

Discussion

This days in view of rising CS rates there is lots of concern in both developing as well as developed countries across the world [7, 8].

The rates of both primary and repeat caesarean delivery have been increased [9].

A large population-based study in Madras shows an incidence of caesarean section to be 20%, 38%, and 47% in public, charitable and private sector respectively [10].

In the present study the incidence of CS were 37.69%

Similarly, higher rates of caesarean section were observed in studies done at tertiary care hospital in jaipur as 31.8% and 31.46% [11, 12].

Studies conducted by authors across different countries showed increased rate of CS. Litorp *et al*, has shown much higher rates up to 49 % in 2011 [13].

As per the Organization for Economic Cooperation and Development (OECD) Health data 2011, the CS rates in countries like Brazil, Mexico, and Turkey have exceeded up to 40 %. The primary and repeat CS rate were reported to be increased by Mittal *et al*, Barber *et al*, Stavrou *et al*. [9, 13, 14]

In present study the most common indication for primary CS were foetal distress 25% followed by Failed induction 17.83% this result disagree with M Poovathi *et al*. [15] who found that that cephalopelvic disproportion were (36%), Non-reactive CTG were(21%), F *et al* distress were (20.5%),

In present study the most common maternal complication

Puerperal pyrexia 21.76% followed by PPH 12.07% and Surgical site infection 9.97% this results in comparison with M Poovathi *et al*. [15] postoperative complications of patients who underwent primary caesarean section. PPH were (8%), Fever were (9.5%) Sub involution (0.1%), sepsis (0.2%) and Wound infection (3.4%).

Conclusion

CS rates have increased primarily due to foetal distress followed by Failed induction. To reduce the rate of CS the rate of primary CS needs to be reduced by proper selection of patient for CS for indications like foetal distress, non-progress of labour, and by offering trial of vaginal birth after caesarean in properly selected women after augmentation of resources.

Recommendations

Future efforts should be put on reducing primary CS rate as it will also reflect in a decreased secondary LSCS rate.

Measures such as establishing a definite indication for CS, precise interpretation of fetal heart rate tracings, judicious use of oxytocin, monitoring with partogram, instrumental vaginal delivery, use of external cephalic version in breech, audit of the indications of CS will help in reducing the rates of LSCS.

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