The Rate and Pattern of Cesarean Section in Al-Yarmouk Teaching Hospital/Baghdad

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Abstrac:
Background: cesarean section: is a life-saving surgical procedure when certain complications arise during pregnancy and labor. However, it is a major surgery and is associated with immediate maternal and perinatal risks and may have implications for future pregnancies as well as long term effects**.**
Objectives: To estimates the rate of cesarean sections in Al-Yarmouk Teaching Hospital in Baghdad and to describe the type, pattern and indications of cesarean sections during the study period.
Subjects and method: Cross sectional study was conducted among women admitted to Al-Yarmouk Teaching Hospital and delivered by cesarean section (CS) for various reasons, during the period from 1st of April to end 30th of June 2014.
Results: The rate of cesarean section during the study period was 47.1%.Of these procedures 65.9% were elective and 44.6% were primary sections. The main indications for cesarean section were: previous cesarean section 33.3%, malpresentation 11.5%and hypertensive disorder of pregnancy 8.6%. Among the emergency cesarean, labour dystocia was responsible for 24.5% of these operations.
Conclusion: The rate of CS reported in this study was very high in comparison with optimal rate for cesarean section stated by WHO .Therefore every efforts should be taken to reduce such high ratewithout a negative impact on maternal and fetal wellbeing and safety.
Key words: Rate, CS, pattern, Al-Yarmouk Teaching Hospital

Introduction:

For the last 30 years, there has been a public health concern about increasing cesarean section rates. The increase has been a global phenomenon [1]. Globally the proportion of deliveries carried out by CS has risen considerably due to complex reasons including: medical, legal, psychological, social and financial factors all play a contributory role [2]. In addition to the demographic and clinical characteristics of population like maternal age, ethnic origin, previous scar, breech presentation, pre-maturity and induction of labor all can greatly influence the rate of CS[1,3] , as well as increase in women's demand for the procedure [4-6]. CS rate (CSR) exist wide variations between different regions and maternity centers, and this suggesting clinical uncertainty and variation in practice [7].

Many countries have recognized high CSR as a major public health problem and are introducing measures to reduce it [6].

The World Health Organization (WHO) in 1985 consider the optimum rate of CSR between (5-15%) [7], but this rate changed by WHO into (10 - 15%) [8], still the appropriate range for the CS rate is debatable [9].

In Iraq, the rate of CS was 28.6% according to Ministry of health report in 2014[10].

Monitoring both CS rates and outcomes is essential to ensure that policies, practices and actions for the optimization of the utilization of CS lead to improved maternal and infant outcomes, and analysis of CS rates and outcome are useful for governments and policy-makers to assess overall progress in maternal and infant health and to plan emergency obstetric care and resource utilization [11]

Objectives of the study

To estimate the rate of caesarean sections in AL-Yarmouk Teaching Hospital in Baghdad during the study period and to describe the type, pattern and indications of cesarean section among the study group.

Methodology

Across sectional study was conducted in the Obstetrics and Gynecology department of Al-Yarmouk Teaching Hospital in Baghdad, during the period from 1st of April to 30th of June 2014.

Study group comprises women who were admitted to Al-Yarmouk Teaching Hospital for delivery and undergo CS for various reasons. The data was collected by using special questionnaire form as well as by reviewing hospital case record of each woman enrolled in the study.

The questionnaire was filled by direct interview with each woman delivered by C/S after taken her verbal consent. The information obtained from woman case record includes the following:

Type of CS which grouped into elective and emergency-

-Indications of CS: as stated in case record

-pattern of CS: 1st CS, 2nd, 3rd, 4th and more

Statistical Analysis:

The data was entered and analyzed using the available computer software facility of SPSS-22(statistical packages for social sciences – version22).

The rate of cesarean section was calculated as [total number of cesarean section for days included during the study period / Total number

of deliveries for days included during the study period]*100 [2].

Pearson Chi- squire test was applied for testing the significance of difference of the qualitative data for testing difference in proportions using 0.05 as the level of significance.

Results:

The total number of deliveries during the study period in AL Yarmouk Teaching Hospital were1900, among them 800(47.1%) women underwent C/S for various reasons. Fig -1

The mean age of women in the study was 27.7±5.3 year, 468(58.5%) belonged to the age group (20 -29).Out of total women, 657(82.1%) were non employed and 279(34.9%) were with primary education, and 243(30.4%) were prime para .Table-1

Among the total cesarean deliveries, 527(65.9%) were elective and 273(34.1%) were emergency. Fig- 2.

Out of the 800 CS, 357(44.6%) were first cesarean and only 73(9.1%) were fourth and more. Fig -3 .

Table -2 presented the indications of CS among the study group.

Previous CS was the main indication, reported among 266 (33.3%) women, while the miscellaneous indications consisted (19.87%) from total CS indication. *Previous scar (266) includes both previous one scar (16) and more than one scar (250).

Table-3 illustrated the indications of CS in relation to type of CS.

Previous scar was the most common indication for elective CS (42.9%), while dystocia was the main reason for emergency CS (24.5%). The analysis of data in table-4 revealed statistical significant association (p=0.0001) between pattern and type of CS, 60.8%of emergency CS were first CS in comparison with 36.2%of elective CS.

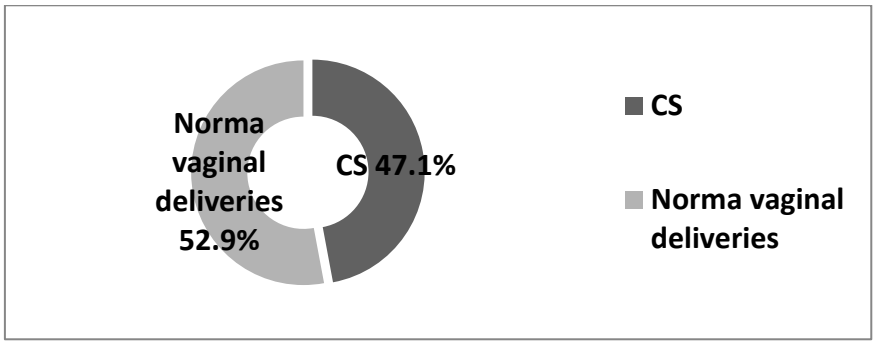

Figure -1 Rate of cesarean section in Al Yarmouk Teaching Hospital during study period

Table-1 Distribution of study group according some sociodemographic characteristic (n=800)

Maternal characteristics		**No**	**%**
Age (years)	<20	34	4.3
	20-24	212	26.5
	25-29	256	32.0
	30-34	216	27.0
	35-39	60	7.5
	≥40 years	22	2.8
	Mean (Range)	27.7±5.3 (16-44)	
Occupation	employed	143	17.9
	Non employed	657	82.1
Education	Illiterate	114	14.3
	Primary	279	34.9
	Secondary	219	27.4
	Higher	188	23.5
parity	Prime	243	30.4
	Para 1	185	23.1
	Para 2	202	25.3
	Para 3	100	12.5
	Para 4 and more	70	8.75

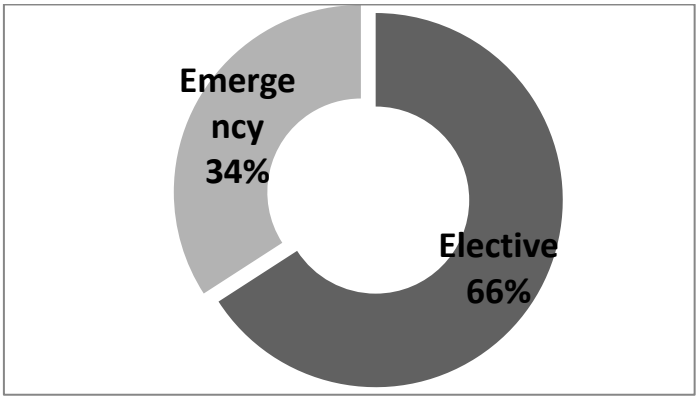

Figure -2 the type of Cesarean section among the study group

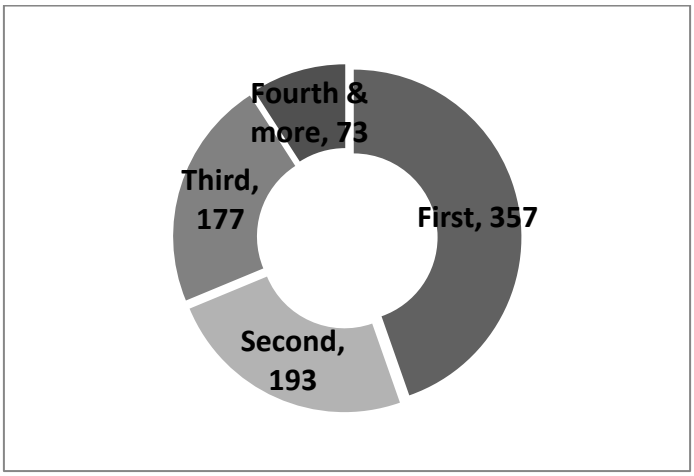

Figure-3The Pattern of cesarean section among study group

Table- 2 the indications for cesarean section among study group

Indication for CS	No	%
Main indications	641	80.13
Previous CS*	266	41.5
Malpresentation	92	14.3
Hypertension disorder during pregnancy	69	10.76
Dystocia(prolong and obstructed labour)	68	10.6
CPD(Cephalopelvic disproportion)	68	10.6
FD(fetal distress)	53	8.2
APH	15	2.34
Twin	8	1.24
MWI(midwife interference)	2	0.3
Miscellaneous indications	159	19.87
Post date	64	40.25
DM	29	18.23
Infertility(precious baby)	24	15.09
Oligohydramnios	20	12.57
Rupture of membrane	18	11.32
Polyhydramnios	4	2.51

Table -3 the cesarean section indication in relation to type of C\S

Indication for CS	Elective CS(527)		Emergency CS(273)	
	No	%	No	%
Main indications	**413**	**78.4**	**228**	**83.5**
previous CS	226	54.7	40	14.7
Malpresentation	87	21	5	1.8
Hypertensive disorder during pregnancy	33	6.3	36	13.2
Dystocia(prolong and obstructed labour)	1	0.2	67	24.5
CPD	57	10.8	11	4.0
FD	1	0.2	52	19.0
APH	0	0	15	5.5
Twin	8	1.5	0	0
MWI	0	0	2	0.7
Miscellaneous	**114**	**21.6**	**45**	**16.5**
Post date	63	55.3	1	2.2
DM	16	14	13	28.9
Infertility(precious baby)	24	21	0	0
Oligohydramnios	7	6.1	13	28.9
Rupture of membrane	0	0	18	40
Polyhydramnios	4	3.5	0	0

Table -4 the pattern of CS in relation to type of CS

Pattern of CS		Elective CS		Emergency CS		X^2=43.9 df=1 p value= 0.0001
		No	%	No	%	
	First	191	36.2	166	60.8	
	Second & more	336	63.8	107	39.2	

Discussion

Several factors, including the increased perception of safety, have contributed to a worldwide increase in rates of cesarean section. In many countries, these rates have reached epidemic proportions, motivating a debate about whether the high rates are appropriate. Unnecessary cesarean section is a classic example of the mismatch between evidence and practice in obstetrics [12].

The CS rate among studied group was 47.1%which is considerably high. Such high rate was also reported by previous studies conducted in Baghdad which range between (44.2%-66%) [13,14]. But this rate was very high in comparison with the rate of CS according to MOH report in Iraq in 2014 which was (28.6%) [10]. and nearby countries which range from (9.29%-19.2%) [15, 16].

The high rate of CS in the current study may be attributed to that, the study conducted in Al-Yarmouk Teaching Hospital which one of tertiary hospital known to deal with critical situations, in addition to the referral of cases from peripheral areas ,as well as the position between multilevel residential areas. Other possible reason for this high rate could be referred to lack of adherence to standard guidelines and, protocols for managing labor and non-availability of audit for CS rate [17].

In current study, elective CS comprises 65.9% of total CS, this rate is nearly similar to the rate previously reported in Baghdad in 2009 which was 59.8% [18] and in Kuwait which was 65.4% [19]. This however contradicts with figures reported in Pakistan and Saudi Arabia [17, 20], where the highest rate were emergency section. The result of this study could be related to that, the main indication for elective CS was repeated CS (42.9%), therefore the possible explanation of such result might be due to that many obstetricians

and women prefer planned CS over the option of trial of labour after CS.

The primary CSR is the percentage of cesarean births to women who have not had a previous CS delivery in a given year [21]. The result of this work revealed that 44.6% of women had underwent first CS .This result was in accordance with results of studies conducted in Sadie Arabia [20] and Baghdad [22] which

showed that 49% and 52% of CS were first CS respectively .

Primary cesarean delivery has been shown to be one of the causes of repeated CS delivery. A rise in primary CSR leads to a rise in the CSR, so lowering the primary CSR contributes to a reduction in the CSR [21].

The decision to perform a cesarean section is based primarily on the question of what is best for or may save the lives of the mother and child [2]. The result of this study revealed that repeated CS was the main indication for CS among the study group, this finding is consistent with the findings of previous studies[22, 23] , which all showed that previous CS deliveries was premier risk factor for successive CS .

The relation might be related to that it is widely assumed that having had one CS makes it impossible to have vaginal delivery in subsequent pregnancies[24] because women with previous CS were at risk of uterine rupture and bleeding and such women, are seldom giving a trial for NVD[25].

The pattern of CS showed significant impact on the type of CS, and it was appeared to increase the rate of elective CS with increase in the number of previous CS .This relation was observed by study conducted in Sudia Arabia [20]. This finding may be due partly to fear of obstetrician from lawsuits and concerns about the legal consequences of uterine rupture, and fear of newborn

morbidity and fear of childbirth, fear of emergency CS or pain during labour ,and potential request of additional surgery by women were all perceived as additional factors contributing to such finding[26, 27] .

References

1- Ventura SJ, Martin JA, Curtin SC, Menacker F,Hamilton BE. Births: final data for 1999. NatlVital Stat Rep 2001; 49: 1-74.

2- Mylonas.L,Friese.K. indications for and risks of elective CS. Deutsches Ärzteblatt .International .2015; 112: 489–95.

3- Maternal and Child Health Research Consortium .Confidential Enquiry into Stillbirths and Deaths in Infancy: Eight Annual Report,8. London: Maternal and Child Health Research Consortium,2001.

4- Lumbiganon P, Laopaiboon M, Gulmezoglu AM, Souza JP, Taneepanichskul S, Ruyan P, Attygalle DE, Shrestha N, Mori R, Nguyen DH, Hoang TB, Rathavy T, Chuyun K, Cheang K, Festin M, Udomprasertgul V, Germar MJ, Yanqiu G, Roy M, Carroli G, Ba-Thike K, Filatova E, Villar J. Method of delivery and pregnancy outcomes in Asia: the who global survey on maternal and perinatal health 2007–2008. Lancet .2010. 375(9713):490–499.

5- Mukherjee SN: Rising cesarean section rate. J Obstet Gynecol India 2006,56(4):298–300.

6- Thomas J, Paranjothy S, Royal College of Obstetricians and Gynaecologists: Clinical Effectiveness Support Unit. The National Sentinel Caesareans section Audit Report. London: RCOG Press, 2001.

7- WHO: Appropriate technology for birth. Lancet 1985, 2:436–437.

8- WHO statement of caesarean section rate on April 2015. Available; http://www.WHO.int/reproductive health/topics.

9- Althabe F, Belizán JM: Caesarean section: the paradox. Lancet 2006, 368:1472–1473.

10- Ministry of health, Iraq. Annual statistical report of ministry of health 2014.

11- Betran.A,Moller.A,Zhang.J etal .The increasing trend in cesarean section rate: Global ,regional and national estimate 1990-2014.journal pone2016;11 doi:10.1371/journal.pone.0148343.aviala ble:http://www.ncbi.nlm.nih.gov/ PubMed.

12- WHO; Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and per natal health 2007–08. Available; http://www.WHO.int/reproductive health/topics.

13- Habib .H,Abdulla.M,Yacoub.s .Knowledge and preference of mothers delivering at AL_kadhumyia teaching hospital regarding cesarean section and normal vaginal delivery .the Iraqi postgraduate medical journal; 2011;10:512-18.

14- Fadhil S., Ali R. Incidence of CS in AL-Elwyia maternity teaching hospital in Baghdad. .IORS Journal of nursing and health science ,2015;4 :60-67.

15- Ba'qeel HS. King Abdul-Aziz Medical Center; Cesarean Delivery. Ann- Saudi Med 2009; 29:179-83.

16- Hindawi I.M; Meri Z.B. Cesarean Section Rates. Saudi Med 2004 ;25: 1631 -5.

17- Karim.F, Ghazi.A ,Ali.T,Aslam.R,Afreen.U,Farhat.R. Trends and determinants of cesarean section. Journal of surgery Pakistan; 2011;16:22-27.

18- Sheiner E, Levy A, Menes TS, Silverberg D, Katz M, Mazor M. Maternal obesity as an independent risk factor for cesarean

delivery. Paediatr Perinat Epidemiol2004;18:196-201.

19- Alexander Omu, Majedah A., Jehad H., Huda A. Cesarean Sections in Kuwait .Kuwait Medical Journal 2007;39:157-161.

20- AL-mulhim.A,M Ali.A,Abu-Heija.A,Bahnasy.A. Factor affecting the rate and the indications of primary cesarean section. Bahrain medical bulletin ;2001;23:160-62.

21- Barber EL, Lundsberg LS, Belanger K, Pettker CM, Funai EF, Illuzzi JL. Indications contributing to the increasing cesarean delivery rate. Obstet Gynecol .2011; 118: 29-38.

22- Al-Dobony.S. Rate, indications and risk factors of Cesarean Section in Maternity Hospitals in Baghdad City: 2009.A thesis submitted to the Scientific Council of Community and Family Medicine in Partial Fulfillment for the Degree of Fellowship of Iraqi Board for Medical Specialization.(un published).

23- Al.Busaidi I,Al-faris.Y,Ganguly.S,Gowri.V. Obstetric and non –obstetric risk factor for cesarean section in Oman .Oman medical journal .2012:27:478-481.

24- Declercq ER, Sakala C, Corry MP, Applebaum S, Risher P. Listening to Mothers: Report of the First National U.S. Survey of Women's Childbearing Experiences. New York: Maternity Center Association, October 2002 . Available:http:// www.ncbi.nlm.nih.gov/pmc/articly.

25- Tiziana Leone A, Sabu S, Padmadas B, Zoe Matthews B. Community factors affecting rising caesarean section rates in developing countries: An analysis of six countries. Social Science & Medicine; 2008;67:1236-1246.

26- Hofmeyr GJ. Evidence-based intrapartum care. Best practice and research. Clinical obstetrics and gynaecology 2005,19(1):103–15.

27- Bettes BA, Coleman VH, Zinberg S, Spong CY, Portnoy B, DeVoto E, Schulkin J Cesarean delivery on maternal request: obstetrician–gynecologists' knowledge, perception, and practice patterns. Obstet Gynecol 2007.109(1):57–66