

Factors affecting rate & indications of caesarean section

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الخلاصة

معدل العمليات القيصرية الأولية التي اجريت في مستشفى الولادة خلال الثلاث سنوات ، و معدل كل سنة مع اسبابها و عوامل الخطورة. مراجعة و تحليل السجلات الطبية في وحدة الاحصاء من الاول من كانون الثاني عام 2004 الى نهاية كانون الاول 2006 ، و تبين اسباب العمليات القيصرية الأولية و تأثير العمر و معدل النجاب بالاضافة الى وزن الطفل على زيادة معدل العمليات. معدل العمليات القيصرية خلال فترة الدراسة كانت 9,16% و معدل السنوات الماضية (2004,2005,2006) كانت كالآتي (10,18%, 9,13%, 8,21%) بالتعاقب. اغلب الفئات العمرية من (21-25) سنة ، اما اهم اسباب العمليات هي عدم تقدم الولادة ، ضيق الحوض ، اعتلان المقعد ، عدم قابلية الطفل على تحمل الولادة. هنالك اختلاف في معدل العمليات القيصرية الأولية في مستشفى الولادة مقارنة مع معدلها في مستشفيات الدول النامية و المتقدمة و لكن هنالك تشابه كبير في اسبابها و تأثير عوامل الخطورة على معدلاتها.

Abstract

A retrospective study of factors affecting rate and indications of primary C/S in Basra maternity and child hospital for period of three years (2004, 2005, 2006). Aim: To assess rate of C/S in this hospital, and the indications of C/S. Methodology: We reviewed the obstetrical files, the data were collected which included maternal age, parity, fetal weight and indications for C/S at period from the 1st of January 2004 to 31st of December 2006. Result: The rate of primary C/S over the period of three years was 9.16%, rate of (2004, 2005, 2006) were (10.18%, 9.13%, 8.21%) respectively. Peak of primary C/S is in child bearing age (21 - 25) & most common indications were as follow, failure of progress, CPD, fetal distress and breech presentation. Conclusion: There were variations in the rates of primary C/S in Basra maternity and child hospital in comparison with others rates of primary C/S in different hospital in developed & developing countries but there were large similarities in the indications

Introduction

Within the past three decades, C/S rate increased in most countries, depending on populations and facilities available, the rate varies between 10 - 25 % in most developed countries (1) e.g. in 2004 C/S rate was about 20% in UK (2)

In USA rise in C/S rate began in mid 1960s till 1980 (2) which drew national attention toward this increase after that all C/S rate decreased until 1996 (2)

In Egypt, significant rise in rate of primary C/S rate from a low 4.6% in 1992, to 10.3 % in 2000 was noted (3), while in king Khalid university hospital

,over a period of five years, C/S rate was 10.3% (4).

The rate of primary C/S increased with increasing maternal age, in USA it was greatest among women between 35 - 39 years (33.2 - 40.9 %) (5), while in Puerto Rico & Bahrain peak age group is (21 - 25) years (6).

Rate of primary C/S is higher among primiparus patients in USA 3folds (8%) than multipara (7).

While in sultan Qaboos hospital mostly among parity 2-3 (8). Fetal body weight also affects C/S rate (9).

Study design

In this retrospective study we reviewed the obstetrical reports of all primary C/S performed between 1st of January 2004 till 31st of December 2006.

The data were collected from medical files of patients that include age, parity, fetal weight and indications for C/S which was decided by obstetricians or most senior residents the collected data arranged in four tables.

Result

During this period, there were (53351) deliveries. Out of these 10143 (5.9%) were total C/S. 5819 (9.16%) were primary C/S {1355 elective C/S (23.25%) and 4464 emergency primary C/S 76.64%}

The rates of primary C/S of the three years 2004, 2005, 2006 were (10.18%, 9.13%, 8.21%).

Table 1-Showed the indications of C/S. In emergency C/S the most common Causes were

(Failure of progress 27.30%, fetal distress 24.93% & breech presentation 9.64%) while in Elective C/S (

The indications of primary C/S were identifying. The diagnosis of failure to progress in files in form of serial pelvic examination or using partograms, while CPD was diagnosed clinically.

Regarding for fetal distress, the diagnosis depends on the presence of meconium and fetal Heart abnormalities detected by sonic aid or cardiotocography.

breech 9.93%, failure of progress 5.55%). Table 2-Showed peak age group was child bearing group (21-25) which was 25.77% for primiparus patient.

In multiparus patient 31-35 years were peak age group (9.84%).

Null parity accounted for peak of all age groups (<20->41 years) (60.67%).

Table 3-Fetal weight less than 2.5 delivered by C/S due to (fetal distress 4.94%, multiple pregnancy 4.64%, breech 3.56%).

Fetal weight more than 3.5 delivered by C/Due to (failure of progress 9.91%, breech 4.75%, fetal distress 3.93%).

Table 1: Indications of primary caesarean section

Indication of primary C/S	Total		elective		emergency	
	%	No.	%	No.	%	No.
Failure to progress and CPD	32.85	1912	27.30	1589	5.55	323
Fetal distress	24.93	1451	24.93	1451	0	0
Breech	19.57	1139	9.64	561	9.93	578
APH	4.16	243	2.86	167	1.30	76
Multiple pregnancy	3.81	222	1.82	106	1.99	116
Cord prolapsed	1.71	100	1.71	100	0	0
Transverse presentation	2.17	127	1.23	72	0.94	55
Congenital anomalies	0.80	47	0.51	30	0.29	17
PET and Eclampsia	4.44	259	3.28	191	1.16	68
Brow presentation	0.85	50	0.85	50	0	0
Face presentation	1.35	79	1.35	79	0	0
Others*	3.25	190	1.16	68	2.09	122
Total		5819	76.64	4464	23.25	1355

*Others: Vaginal septum, anterioposterior colporrhaphy, previous myomectomy and fibroid

Table 2: Correlation of maternal age and parity with caesarean section.

Age/Years	Parity								Total	
	0		1 - 5		6 - 10		≥11		No.	%
	No.	%	No.	%	No.	%	No.	%		
≤20	419	7.20	40	0.68	0	0	0	0	459	7.88
21 – 25	1500	25.77	350	6.01	9	0.15	0	0	1859	31.93
26 – 30	952	16.36	354	6.08	71	1.22	0	0	1377	23.66
31 – 35	531	9.12	573	9.84	205	3.52	0	0	1309	22.48
36 – 40	129	2.21	179	3.07	116	1.99	17	0.29	441	7.56
≥41	13	0.01	121	2.07	163	2.80	77	1.32	374	6.20
Total	3544	60.67	1617	27.75	564	9.68	94	1.61	5819	

Table 3: Correlation of Fetal weight and caesarean section

Indications	<2.5kg		2.5 – 3.5kg		>3.5kg		Total	
	No.	%	No.	%	No.	%	No.	%
Failure to progress and CPD	8	0.13	1303	21.60	598	9.91	1909	31.64
Fetal distress	298	4.94	944	15.64	205	3.39	1447	23.97
Breech	215	3.56	637	10.56	287	4.75	1139	18.87
APH	74	1.22	101	1.67	64	1.06	239	3.95
Multiple pregnancy	280	4.64	149	2.47	27	0.44	456	7.55
Cord prolapsed	6	0.09	46	0.76	45	0.74	97	1.59
Transverse presentation	47	0.77	63	1.04	17	0.28	127	2.09
Congenital anomalies	11	0.18	27	0.44	6	0.09	44	0.71
PET and eclampsia	91	1.50	132	2.18	35	0.58	258	4.26
Brow presentation	0	0	38	0.62	11	0.18	49	0.8
Face presentation	18	0.29	38	0.62	22	0.36	78	1.27
Others	10	0.16	98	1.62	81	1.34	189	3.12
Total	1058	17.53	3576	59.28	1398	23.17	6032	

Each fetus in multiple pregnancies (twin & triplets) weighed separately

Table 4: Rates of primary CS for three years.

Year	No. of primary CS	No. of total CS	No. of vaginal deliveries	Rate of primary CS
2004	2106	3687	16981	10.18%
2005	1931	3339	17805	9.13%
2006	1782	3117	18565	8.21%
Total	5819	10143	53351	9.16%

Discussion

Rise in C/S is global phenomena but national variations is considerable, in our study the rate of primary C/S was 9.16% during period of three years , (10.18%,9.13%,821%) for(2004, 2005 , 2006) respectively.

In sultan Qaboos hospital over period of three years, the incidence.

Was 3.2% which is lower than of our study⁽⁸⁾, in USA in 2004 the rate of primary C/S was 20.6%⁽¹⁰⁾.

Rise in the rate of C/S in our study can be explained by , Basra maternity and child hospital is tertiary referral center so all emergency cases from Basra boundaries may be referred to this hospital.

Other factors which participated in increase in C/S rate was no attempt of vaginal breech delivery.

The most common indications was failure of progress(32.85%) and this in agreement with Sehgal (Charleston)

,Tampkoudis (Greek hospital) & Khawaja(Pakistan) respectively^(11,12,13).

The second most common indication was fetal distress and this in agreement with Adel study at princess Basma teaching hospital⁽¹⁴⁾.

But in disagreement with Fourn (Africa) & Chauhan (USA) who found fetal distress is first leading cause respectively^(15, 16).

Breech accounted for (19.57%)of total C/S rate and first leading cause of elective primary C/S (9.93%) and this in agreement with Abdulaziz⁽¹⁶⁾.

Null parity was significantly associated with increase C/S rate for all age groups & this in agreement Apeawusu and disagreement with Marian who showed increased C/S among multiparous patient⁽¹⁷⁾.

References

- 1-Arulkumaran S. Malpresentation, malposition, cephalopelvic disproportion and obstetric procedure. Dewhurst's text book of Obstetric and Gynaecology. 7th ed, edited by D. Keith Edmonds. 2007; 24: 213 - 226.
- 2-5. Eugene D, Fay M and Marian M. Factors associated with the rise in primary caesarean birth in the United States, 1991 – 2002. American J. of Public Health, 2006.
- 3-. Marwan K, Rozzet J and Tamar Kabakian k. Rising In caesarean section rate in Egypt Bith ; 31 (1): 12 - 16.
- 4-. Khashoggi T, Soltan M, Al Nuaim L, Addar M, Chowdhury N and Adelusi B. Primary caesarean section in King Khalid University Hospital: Indications and Obstetric outcome. Ann Saudi Med. 1995, 15 (6): 585 - 8.
- 5-Taffel S, Clarke S and Placek P. Rate of caesarean sections among Puerto Rican women in Puerto Rico and U.S. Mainland (1992 – 2002). 2003; 88: 1182 - 1186.
- 6-. Abdulaziz A, Abdul Hai M, Adel T, Abu Heija and Ahmed B. Factors affecting the rate and indications of primary caesarean section. Bahrain Med Bull 2001; 23 (4): 160 - 62.
- 7-. Hankin G, Clark S and Munn M. Caesarean section on request at 39 weeks. Semin Perinatol. 2006; 30(5): 276 - 87.
- 8-Marian M, Radha K and Vaclavin K. Sultan SQU Journal for Scientific Research: Medical Science 2002; 4(1- 2): 29 - 32.
- 9-. Mikulandraf, Perisa M and Stojnic E. When is fetal macrosomia ($\geq 4500g$) an indication for caesarean section? Zentralbl Gynakol. 1996; 118 (8): 441 - 7.
- 10-Richard H. Indications for which elective caesarean section should be the strongly recommended means of delivery. Obstetrics and Gynaecology an evidence based text for MRCOG. Edited by David M., Philip N. 2004; 31: 382 - 390.
- 11-. Sehgal N. Changing rate and indications for caesarean sections at a community hospital from 1972to1979.2003;12(3):192-7
- 12-. Tampkoudis P, Assimakopoulos E, Grimbizis G, Zafarakas M, et al. Caesarean section rates and indications in Greece: data from a 24 years period in a Teaching Hospital.2004; 31(4):289 – 92.
- 13-. Khawaja N, Yousaf T and Tayyeb R. Analysis of caesarean delivery at a tertiary care Hospital in Pakistan. J Opestet Gynecol. 2004; 24(2): 139-
- 14-. Adel T, Saed M. Correlation of decrease CS rates and decrease in perinatal mortality at princess Basma Teaching Hospital in North Jordan. Ann Saudi Med. 1995; 15(1): 29 - 31.
- 15-. Fourn L, Alihonou E, Seguin L and Ducics. Incidence and factors associated with primary caesarean section in Benin (Africa). Rev Epidemiol Sante Publique. 1994; 42 (1): 5 – 12
- 16-. Chauhan S, Roach H, Magann E, Morrison J and et al. Caesarean section for suspected fetal distress. J Reprod Med. 1998; 43(2):161-2.
- 17-Apeawusu B, Cecil A, Samson A, Amoa and Klufio. A case control study of primary caesarean section at Part morese by General Hospital, Papua New Guinea. DNG Med. J 1997; 40(3 -4):119 - 126.