

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20205211>

Original Research Article

Caesarean section at Koudougou regional hospital centre: indications and prognosis

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Received: 01 October 2020

Accepted: 11 November 2020

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ABSTRACT

Background: Objective was to study the indications and the prognosis of cesarean section in the obstetrics and gynecology department of CHR Koudougou from August 1st to October 16th 2018.

Methods: This was a cross-sectional study for descriptive purposes with prospective collection of data over the month and monitoring of parturients up to the 42nd day post cesarean section. The study covered the period from August 1 to October 16, 2018. Gestures received in the work room and those hospitalized for a scheduled cesarean were involved in this study.

Results: This study involved 316 deliveries. The cesarean section rate was 34.8% (n=110). The average age was 26.75 years with extremes of 12 and 42 years. Term pregnancies represented 90.9%. History of cesarean section was observed in 47, 3%. The main groups contributing to the cesarean section rate represent: Groups 5 (9.5%), Group 1 (9.2%), Group 3 (5.1%), the scar uterus (17.3%) and suffering fetal (14.6%). The reported complications were 15.5% including 3.6% parietal suppuration and 0.8% stillbirth.

Conclusions: The cesarean section occupies an important place in the maternity service of the RHC of Koudougou. Robson's group 5 was the largest contributor to the overall cesarean rate in our study. Measures should be taken in this group so that the uterine scar does not become an absolute indication for cesarean.

Keywords: Caesarean section, Indications, Koudougou regional hospital center, Prognosis

INTRODUCTION

The ideal cesarean section rate, according to the World Health Organization (WHO), is between 10% and 15%.¹ Studies have shown that below a cesarean rate of 10% in the general population, maternal and neonatal mortality decreases if the cesarean rate increases.¹ However, the priority is not to reach a specific rate but to make every effort to perform a cesarean section in all women who need it.² Given the risk of morbidity and mortality

associated with caesareans, controlling caesarean rates is a major concern in the obstetric field.³ In Africa, national rates for caesarean sections remain at very low levels. In Zambia, the caesarean section rate increased from 1.9% in 1996 to 3% in 2007.⁴ In Kenya, the rate increased from 4% in 2003 to 6.2% in 2009.⁵ In Benin, from 2.2% in 1996, it increased to 3.6% in 2006.⁶ In Uganda, the caesarean section rate (3.1%) remained stable between 2000 and 2006.^{7,8} In Burkina Faso, the caesarean section rate increased from 0.7% in 2003 to 3.1% in 2010.⁹ No study

has been conducted on the follow-up of women in post-caesarean section. The indications and prognosis of the caesarean section with follow-up of the caesarean patients up to the 42nd day constitute the aim of the study.

METHODS

This was a descriptive cross-sectional study with data collection from August 1 to October 16, 2018 and follow-up of parturients until the 42nd day after cesarean section of all patients who have undergone a cesarean section. Patients caesareanized outside the department, but referred for post-operative complications. The Robson classification is an international benchmark system for the assessment, monitoring, and comparison of cesarean rates in health care settings over time and between WHO recommended health care facilities. The groups of "Robson" are:

Group 1: Nulliparous, single pregnancy, cephalic presentation, gestational age=37SA, spontaneous labour.

Group 2: Nulliparous, single pregnancy, cephalic presentation, gestational age=37SA, induction of labour or prelabour caesarean section.

Group 3: Multiparous, single pregnancy, cephalic presentation, gestational age=37SA, spontaneous labour.

Group 4: Multiparous, no scarred uterus, single pregnancy, cephalic presentation, gestational age=37SA, induction of labour or prelabour caesarean section.

Group 5: All multiparous with at least one uterine scar, single pregnancy, cephalic presentation, gestational age=37SA.

Group 6: All nulliparous, single pregnancy, breech presentation.

Group 7: All multiparous, single pregnancy, breech presentation, including scarred uterus.

Group 8: All multiple pregnancies, including oblique scarred uterus included.

Group 9: All single pregnancies with transverse or oblique presentation, including scarred uterus.

Group 10: All single pregnancies with cephalic presentation, gestational age <37SA, including scarred uterus.

The epidemiological and clinical variables studied were: age, socio-professional status, spouse's profession, provenance, marital status, mode of admission, reasons for referral, medical history, gynecological and obstetric history, gestational age, number of fetuses, presentation of the fetus, emergency cesarean and scheduled cesarean, maternal and fetal prognosis and maternal and perinatal morbidity and mortality. The data was collected

anonymously, captured and analyzed using Epi Info software version 3.5.2 in its English version and Excel 2016.

RESULTS

The caesarean rate was 34.8%. That is to say 110 for 316 deliveries. The average age is 26.75±6.6 years with extremes of 12 years and 42 years. The 25-29 year age group represented 32.7%, the 30-34 age group 16.4%, the under 15 age group 1.9%, the 15-19 year age group 14.5%, the 20 to 24 years 20% that of 34 to 39 years 10.9%) and over 40 years 4.55%. Housewives represented 63.6%, pupils/students 10%, civil servants 20% and shopkeepers 6.36%. Women with a married life were represented at 80.6%, singles 12.96% and those living with a partner 6.48%. The population of our study living in urban areas was 58.2% and that living in rural areas 41.8%.

Table 1: Distribution of women by reason for evacuation (n=62).

Reason for evacuation	Number of personnel	%
Term overrun on scarred uterus	3	4.8
Transverse	4	6.5
Scarred uterus	8	12.1
Working trial	1	1.6
Stationary expansion	1	1.6
Pre severe eclampsia	4	6.5
Fetal distress	5	8.1
Failure to commit	2	3.2
Presentation of the front	1	1.6
Calcified placenta	1	1.6
Uterine myoma on elderly primiparous	1	1.6
Presentation of headquarters	4	6.5
Heart sound fetuses not perceived	1	1.6
Bleeding	1	1.6
Cephalopelvic disproportion	5	8.1
Vaso-occlusive crises	1	1.6
Threat of premature delivery	1	1.6
Better support	2	3.2
Mechanical dystocia	1	1.6
Premature rupture of membranes	4	6.5
Hydramnios	1	1.6
Macrosomia	2	3.2
Excessive uterine height in a primiparous woman	5	8.1
Generally narrowed basin	3	4.8
Total	62	100

Admission was direct in 46.4% of cases and evacuated patients represented 56.4% of cases. Table 1 presents the main reasons for the evacuation of caesarianized women.

Three medical histories were found in women under caesarean section, including one (1) case of hypertension (0.9%), one case of sickle cell disease (0.9%), one case of HIV (0.9%). The average number of pregnancies is 2.6 ± 1.8 with extremes of 1 and 11 pregnancies. The parity was between 0 and 10 with an average of 1.5 ± 1.8 . Figure 1 illustrates the distribution of patients by number of pregnancies.

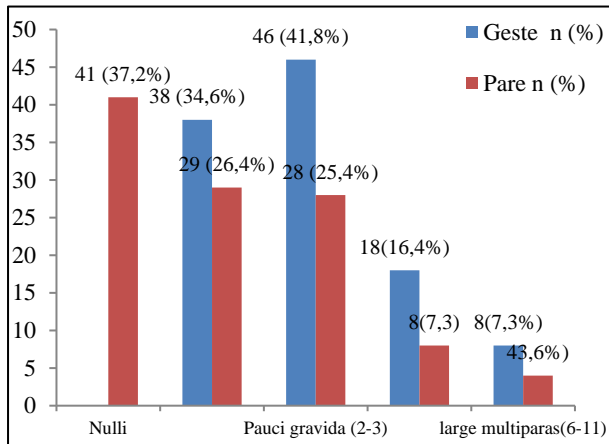


Figure 1: Distribution of women by number of gestures and pares (n=110).

The distribution according to the number of scar is summarized in Figure 2.

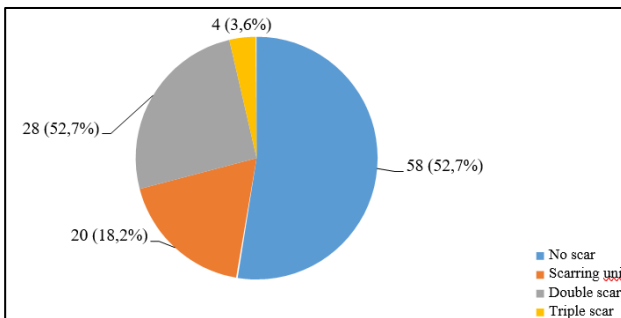


Figure 2: Distribution according to previous history of previous scarring.

A history of caesarean section was found in 52 women or 47.3%. The gestational age was between 37 and 40 weeks of gestation or 90.9% of the cases. Figure 3 shows this distribution according to gestational age. The onset of labor was spontaneous (79.1%), started (3.6%) and 17.3% had a scheduled cesarean. Patients with a single pregnancy represented 86.4% (95 cases). Twelve pregnancies were 13 and 2 for triple pregnancies. The presentation of the fetus was cephalic in 88.2%, the presentation of the seat 7.3% and the transverse presentation 4.6%. Cesarean sections were performed urgently (83.6%) and scheduled

cesarean sections (16.4%). Table 2 gives the distribution of cesareans by Robson's groups.

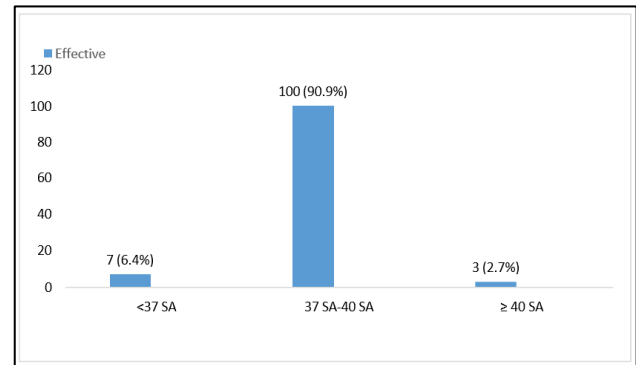


Figure 3: Distribution by gestational age at delivery (n=110).

Table 2: Caesarean section rate according to Robson's groups (n=110, n=316).

Robson's classification	Size (A)	Percentage (A/110)	Contribution to overall C-section rate (A/316)
Group 1	29	26.4	9.2
Group 2	3	2.7	0.1
Group 3	16	14.6	5.1
Group 4	4	3.6	1.3
Group 5	30	27.3	9.5
Group 6	5	4.6	1.2
Group 7	3	2.7	0.1
Group 8	10	9.1	3.2
Group 9	5	4.6	1.6
Group 10	5	4.6	1.6
Total	110	100	

We noted cases of anemia during hospitalization (2.7%). All the patients operated on during our study came out alive. We noted no postoperative complications, i.e. 84.5% (93 cases) and 17 complications (15.4%), including 15 complications among patients who were evacuated or referred, i.e. 13.6%. All the caesarianized women seen at the consultation of the 42nd day, Figure 4 illustrates the distribution of complications.

Group 8 recorded 29.4% of cases of postoperative complications, followed by groups 3, 4, 5 and 10 with 17.7% and 11.8% of cases respectively. The complaints at the postnatal consultation were: headache 3, 6%, abdominal pain 1.8%, pelvic pain 1.8%, fever 0.9% and 91.8% presented no complaints. The mean length of stay was 3.2 ± 1.18 days with extremes of 2 and 10 days. During the study, 5 cases of fresh stillbirths or 3.9% of births were recorded, due to hypertensive problems (eclampsia, pre-eclampsia) and to the placenta previa.

Table 3: Main indications for caesarean section in each Robson group.

Main indications	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	Total
Acute fetal suffering	8	---	6	---	2	---	---	---	---	---	16
Short inter-generic space	4	---	2	1	1	---	---	---	---	1	9
Immature pond	2	---	---	---	1	---	---	---	---	1	4
Placenta praevia covering	2	---	---	---	1	---	---	---	---	---	3
Fetopelvic disproportion for hydrocephalus/macrosomia	---	2	1	1	2	---	---	---	---	---	6
Unspecified fetopelvic disproportion	4	---	2	---	---	---	---	---	---	---	6
Pre-uterine rupture	3	---	1	---	---	---	---	---	---	---	4
Seat presentation	1	---	---	---	---	5	1	---	---	---	7
Fetopelvic disproportion for narrowed pelvis	1	---	---	---	---	---	---	---	---	---	1
Dynamic dystocia	1	---	---	---	---	---	---	---	---	---	1
Antepartum haemorrhage for retroplacental haematoma	1	---	---	---	1	---	---	1	---	---	3
Premature diaphragm rupture	1	---	---	---	---	---	---	---	---	---	1
Oligoamnios	1	---	1	---	---	---	---	---	---	---	2
Eclampsia	---	1	1	---	---	---	---	---	---	---	2
Other obstetrical history ⁽¹⁾	---	---	---	1	1	---	---	---	---	---	2
Presentation of the recessed side	---	---	1	---	---	---	---	---	---	---	1
Medical pathology of the mother ⁽²⁾	---	---	1	1	1	---	---	---	---	---	3
Previous caesarean section, scarred uterus	---	---	---	---	18	---	1	---	---	---	19
Pre-eclampsia	---	---	---	---	2	---	---	1	---	2	5
Uterine rupture	---	---	---	---	---	---	1	---	---	---	1
Multiple pregnancy	---	---	---	---	---	---	---	7	---	---	7
Transverse presentation	---	---	---	---	---	---	---	1	5	---	6
Hydramnios	---	---	---	---	1	---	---	---	---	---	1
Total	29	3	16	4	31	5	3	10	5	4	110

1): Spontaneous abortions, 2) : Sickle cell disease, HIV, MTA

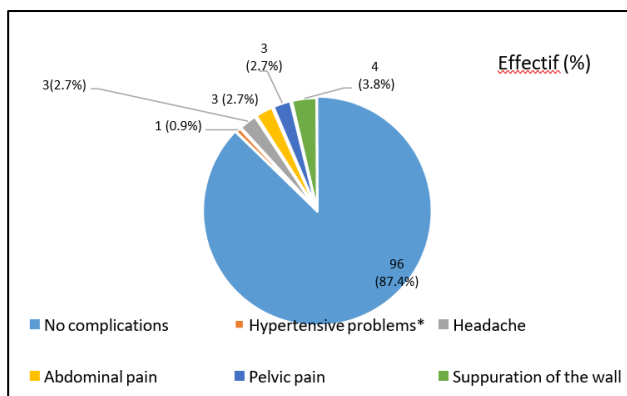


Figure 4: Distribution of complications in women with caesarean section at the 42nd day visit (*=hypertensive flare-up).

We identified 1 newborn baby who died within 24 hours of birth, i.e. 0.79% of the cases and 121 newborn babies who left alive, i.e. 95.3%, of which 3 were transferred to the pediatric unit for prematurity. The following Table presents the distribution of newborns according to the method of discharge from maternity.

Table 4: Distribution of newborns according to the mode of discharge from the maternity hospital.

Children	Numbers	Percentages	
Alive	Mono-fetal	86	67.7
	Twin	26	20.5
	Triplet	6	4.7
Stillborn fresh	5	3.9	
Born alive and deceased <24 hours	1	0.8	
Transfer	3	2.4	
Alive on 42nd day	121	95.3	
Total	127	100	

DISCUSSION

The frequency of cesarean section in this study was 34.8%. This rate is close to that of Bokossa in Côte d'Ivoire in 2016 in 31.3%.¹⁰ Lower frequencies were found by Bambara in 2007, and Ouédraogo in Burkina Faso with respective rates of 11.3%; 17.2% and 22.2%.^{6,11} The frequency found in our study could be explained by the reference level of the CHR in the health pyramid in Burkina Faso.

Table 5: Comparison of caesarean section rates and contributions to the overall rate by Robson's groups.

Groups of « Robson »	Our series		Ouédraogo CM Serie District of Boulmiougou	
	Cesarean section rate (%)	Overall rate (%)	Cesarean section rate (%)	Overall rate (%)
1	26.4	9.2	17.4	5.1
2	2.7	0.1	82.7	1.1
3	14.6	5.1	10.9	4.3
4	3.6	1.3	83.6	1.4
5	27.3	9.5	49.8	5.8
6	4.6	1.6	47.4	0.9
7	2.7	0.1	23.9	0.7
8	9.1	3.2	28.4	1.4
9	4.5	1.6	93.1	0.7
10	4.6	1.6	15.4	1.1
Total	100	34.8	22.2	22.2

The average age of women is 26.75 years and corroborates with the results of other authors.¹¹ The 20 to 34 age group represented 69.1%. This rate is close to certain authors.¹⁵ This could be explained by the high representativeness and the high fertility of this age group in the population of women of reproductive age.¹⁴

Patients from rural areas represented 41.8%. Our results are higher than those of Ouédraogo in 2017 at the HDB which found 31.71%.¹¹ This difference could be explained by the reference level of the CHR in the health pyramid in Burkina Faso to provide secondary care.

The proportion of caesarean sections was higher among evacuated women (56.4%) compared to those who came by herself (43.6%) with $p=0.9$. This could be explained by the fact that most of the evacuated women already presented a serious complication. Caesarean sections were performed in emergency (83.6%) and 16.4% in the program.

Loco regional anesthesia was performed in 98.2% and 1.8% on GA. Table 5 compares the caesarean section rate and the rates according to the Robson groups in our study with those of other series performed at the BF.

The cesarean rate in Group 5 was 27.3% making it the largest contributor to the overall Cesarean rate of 9.5%. Studies carried out in Burkina-Faso found similar results.¹¹ Other studies around the world have had the same results.¹²⁻¹⁴ Our results are different from those of Nakamura Pereira and Al in Brazil for group 2 at the overall cesarean rate.¹⁵ The high rate of indications in group 5 could be explained by the high frequency of the indication for uterine scar in our study. Indeed, the uterine scar was the first indication for caesarean section with a proportion of 17.3% of all indications and the first in group 5 with a proportion of 58.1%.

The second contributor to the overall cesarean rate is group 1 with a rate of 9.2%. Our results are identical to those

found Kazmi et al (Group 1=3.77%) and Bilobrk et al (Group 1=3.74%).¹²

Group 3 had a rate of 5.1%. This rate corroborates that of Bilobrk et al (Group 3=1.42%) who also found the same group.¹² These contributions (group 1 and group 3) could be explained by the large number of these women in our study population and by the high frequency of SFA (14.6%) among the indications for cesareans during our period of study. Groups 6, 7, 8, 9, 10 generally have very low rates. The particularity of group 9, which contributes very little to the overall rate of caesarean section, is due to the low representability of this group in our study population (4.6% of the population).

Postoperative complications were 15.5%. This rate is lower than those reported in the African literature.¹⁷ The quality of care at CHR in Koudougou could explain the good maternal prognosis for operated patients.

The proportion of complications was significantly higher in evacuated parturients (13.6%) compared to those who came by themselves (1.8%) with a significant difference ($p = 0.0033$). This morbidity could be justified by the late evacuation and the unfavorable terrain on which the intervention is carried out (RPM, long working hours).

Robson's group 8 had the highest number of complications. Infectious complications were the most frequently encountered. Ouédraogo et al also found the same complication in the first rank with a percentage of 93.3%.¹¹ This could be explained by the fact that some patients were evacuated in time to first level hospital establishments (CHU) better suited to the management of complications.

In our study we noted 5 fresh stillbirths or 3.9% of births. This rate is lower than that of Bambara in 2007 which found a rate of 10.4% but higher than that of Ouédraogo with 3.4%.^{11,18}

We recorded 1 case of death of newborns within 24 hours of life; this can only be explained by a delay in diagnosis because the CHR is equipped with a neonatology unit ready to receive newborns in vital distress.

The average length of hospital stay was 3.2 ± 1.2 days with extremes of 2 and 10 days. Our results are different from those of Ouédraogo who found average stays of 4.2 days respectively. Our results could be explained by the early lifting of patients who underwent a cesarean.¹¹

CONCLUSION

Cesarean sections represent more than a third of deliveries in the gynecology-obstetrics department. The main indication for cesarean section was uterine scar (Robson group 5). Attention should also be paid to Groups 1, 2, 3 and 4 of Robson qualified as groups at low risk of cesarean section in our study. The indications for cesarean section must be limited to situations where the fetal or maternal prognosis is at stake in the very short term and must be defined beforehand. Neonatal mortality, as well as maternal morbidity are not negligible.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Djiguemde NWN, Lankaonde M, Savadogo-Komboigo BE, Sansan RSIB, Ouedraogo WE, Thieba-Bonane B. Caesarean section at Koudougou regional hospital centre (RHC): indications and prognosis. *Int J Reprod Contracept*