Indications for Caesarean Section for women of low obstetric risk - an audit

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Submitted: August 2022
Accepted: January 2023
Published: February 2023

Citation: Lukumay et al. Indications for Caeserean section for women of low obstetric risk - an audit South Sudan Medical Journal 2023;16(1):12-15 © 2023 The Author(s) **License:** This is an open access article under CC BY-NC DOI: https://dx.doi.org/10.4314/ssmj.v16i1.3

ABSTRACT

Introduction: The Caesarean Section (CS) rate is dramatically increasing across obstetric populations. This study aimed to determine the adherence to criteria for standard diagnosis of the common indications for CS among women of a low-risk group. This group, known as group 3 in the Robson classification, is multiparous, term with singleton pregnancy and have not had a previous CS.

Methods: We conducted a cross-sectional study at Muhimbili National Hospital from August to December 2018. The criteria for standard diagnosis of foetal distress, obstructed labour, arrested labour and cephalopelvic disproportion were adopted from peer groups publications based on local expert consensus. Data were analysed using a statistical package for social sciences (SPSS) version 20.

Results: A total of 1,670 emergency CS's were performed during the study period, 392 (23.5%) were women of Robson group 3, of these women 101 (25.8%) had foetal distress, 92 (23.5%) obstructed labour, 88 (22.4%) arrested labour and 64 (16.4%) cephalopelvic disproportion. The proportion of CS's which met the criteria for standard diagnosis of indications for CS were 61.4% foetal distress, 52.2% obstructed labour, 58% arrested labour, and 45.3% CPD with total average of 55.1%.

Conclusion: Generally, the standard criteria for audited indications of CS have been met by 55.1% during the study period. Thus, follow up, on the job training and updating about adherence to standard criteria for best practice are recommended.

Key words: Caesarean Section, criteria, standard diagnosis, Robson group 3, Tanzania

INTRODUCTION

The Caesarean Section (CS) rate is dramatically increasing globally, nationally and regionally independent of economic considerations.[1] CS is a lifesaving procedure, but may be associated with complications, disability or death particularly in settings where safe surgery and management of surgical complications cannot be guaranteed.[2] The 10-group classification (Robson classification: See Box at end and https://robson-classification-platform.srhr.org/about) has allowed meaningful and relevant comparison of CS rates and obstetric characteristics that explain the risk for CS.[3] Among the ten groups, group 3 includes women of low risk. They are multiparous, term with a singleton pregnancy, and have not had a previous CS.[4]

Women of low risk for CS have contributed significantly to the increase of CS rate among different health facilities.[5] At Jaipuriya Hospital, Western India, women in a low-risk group formed 11.6%.[6] In Tanzania, the rate of CS among women with low obstetric risk was found to be 33%. This contributed to the overall CS rate by 12%.[7]

Indications for primary CS among multiparous women includes obstructed labour, foetal distress, antepartum haemorrhage, malpresentation, cephalopelvic disproportion (CPD) and arrested labour.[8] Auditing the management of obstetric emergencies is a quality improvement step that systematically and critically improves obstetric care.[9] Previous studies have shown improvement in compliance with guidelines.[10, 11] This study aimed to determine the adherence to criteria for standard diagnosis of indications for CS among women of low obstetric risk, Robson group 3.

METHOD

Study design

A descriptive cross-sectional study was conducted at Muhimbili National Hospital (MNH) in Dar-es-Salaam, Tanzania from August to December 2018 in the maternity unit.

Data collection

Data were collected using a structured checklist which consisted of the patient characteristics, indications for CS and adapted criteria for diagnosis of foetal distress, obstructed labour, arrested labour and CPD. Criteria for foetal distress and obstructed labour were adapted from peer publications conducted at MNH by Mgaya at el.[10, 11] The diagnosis for foetal distress and obstructed labour consisted of both major and minor criteria where the fulfilment for standard diagnosis of foetal distress and obstructed labour required at least one major and one minor criterion. Criteria for arrested labour were adopted from the American College of Obstetrics and Gynaecology (ACOG) and Society of Maternal Foetal Medicine (SMFM) obstetric care consensus.[2] Standard diagnosis of arrested labour has three criteria where the diagnosis requires one of the three criteria. Criteria for CPD were adopted from the Royal College of Thailand practical guideline which consisted of three criteria.[12] The standard diagnosis of CPD requires all the three criteria.

Data analysis

Data were analysed using SPSS version 20. The number of cases that met the standard criteria for diagnosis of obstructed labour, foetal distress, arrested labour and CPD were analysed through SPSS composite scoring formulation method. (Available online at https://en.wikiversity.org/w/index.php?title=Composite_scores&oldid=1750584).

Ethics approval and consent to participate

Ethical clearance was obtained from the Senate Research and Publications Committee of Muhimbili University of Health and Allied Sciences. Permission to conduct the study was obtained from MNH authority as per hospital management protocols.

RESULTS

During the study period 2,306 CS's were performed, 1,670 (72.4%) emergency CS's whereby 392 (23.5%) were performed among women of Robson group 3. Among 392 women, Robson group 3, 345 (88.0%) were audited for diagnosis of obstructed labour, foetal distress, arrested labour and CPD by which 190 (55.1%) met the criteria for standard diagnosis.

The mean age was 30 years, most were aged between 25-29 (35.7%) and 30-34 years (32.9%). More than 50% had one normal delivery followed by current CS delivery. Table 1.

Table 1. Demographic and characteristics of women of low obstetric risk for CS Robson group 3 (N=392)

Variable	Frequency n (%)
Age (years)	
<24	48 (12.2)
25-29	140 (35.7)
30-34	129 (32.9)
>35	75 (19.1)
Parity	
2	202 (51.5)
3	103 (26.3)
4	87 (22.2)
Admission status	
Referral hospital	244 (62.2)
Muhimbili National Hospital	148 (37.8)

Table 2: Indications for emergency CS among women of low obstetric risk for CS Robson group 3 (N=392)

Indication	Frequency n (%)
Foetal distress	101 (25.8)
Obstructed labour	92 (23.5)
Arrested labour	88 (22.4)
CPD	64 (16.3)
Abruption placenta	14 (3.6)
Placenta praevia	12 (3.1)
Bad obstetric history in labour	10 (2.6)
Cord prolapse	7 (1.8)
Cervical cancer	3 (0.8)
Vaginal cyst	1 (0.3)

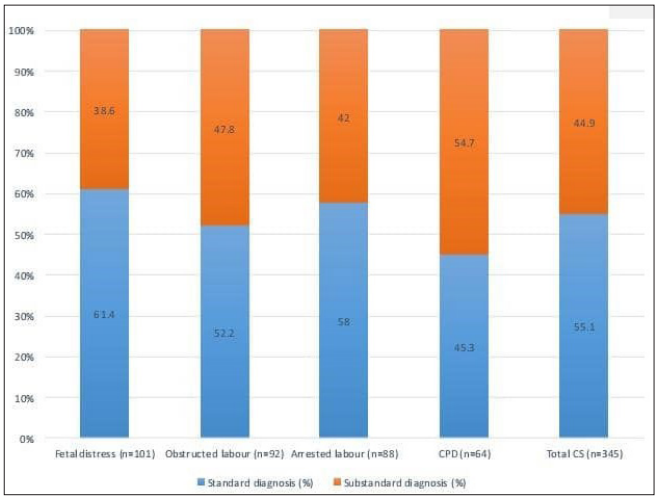

Figure 1. Proportion of indications for CS that met the criteria for standard diagnosis among women of low obstetric risk for CS, Robson group 3 (N=345)

Foetal distress (25.8%) was the leading indication for CS followed by obstructed labour (23.5%), arrested labour (22.4%) and CPD (16.3%). Table 2. Standard diagnosis for foetal distress and arrested labour were 61.4% and 58% respectively and the standard diagnosis for CPD was 45.3% Figure 1.

DISCUSSION

There has been a dramatic increase in the rate of CS globally but is questionable whether the indications met the standard criteria for diagnosis. This study aimed to address this issue in Tanzania at a national referral hospital which serves the largest number of obstetric cases countrywide. During the study period the rate of CS among women of Robson group 3 was 23.5%. This finding showed the improvement in reduction of CS among the low-risk group compared to the previous rate as found by Helena et al in her study done at the same facility.[7] According to the Robson classification on evaluation for CS rate and indications these group 3 women have shown the lower rate of 5.5%.[4]

The most common indication for CS in this group was foetal distress (25.8%) followed by obstructed labour (23.5%), arrested labour (22.4%) and CPD (16.3%). Audit for the most common indication for CS based on standard criteria for diagnosis, foetal distress scored a higher percentage of adhering to the criteria for best practice. In comparison with the previous study that evaluated improvement in quality of care for management of foetal distress there was improvement in adherence to the criteria by about 10% higher.[11]

Obstructed labour was the second most important indication for CS in this study. The adherence to criteria for diagnosis in our study was more than 50% but shows a drop of more than 30% when compared with a study that was done in the same facility where adherence was 81%.[10]

Arrested labour in our study was audited and 58% of cases had met the standard criteria for diagnosis. In a study that was conducted in Canada, adherence to the diagnostic guidelines for cervical dystocia was 52% up to 68%.[13] The adherence to the diagnosis of arrested labour in both facilities showed similarity in performance despite differences in geographical location.

In our study the criteria for diagnosis of CPD that met the standard of diagnosis was 45.3%. Such a finding appears to be contrary to what was found in India where the same adherence was found to be 80.4%,[14] and similarly to that found in Thailand where adherence was 83%.[15]

CONCLUSION

Generally, the standard criteria for audited indications for CS has been met by 55.1% during the study period. The criteria for the diagnosis of CPD was violated by more

Robson Classification Platform

Michael Robson is an obstetrician in charge of the maternity hospital in Dublin, Ireland. In 1988 he began to set up a system of categories of women having babies in order to help maternity staff make good decisions on the possible need for Caesarean Section. He started with one category, a mother with a single baby in spontaneous labour at 37 weeks or more.

In the end the Robson classification has ten categories. It is a way of looking at the advantages and disadvantages for the management of care of the mother and baby according to whether they are at low or high risk. He rejects a simplistic setting of a "ideal" C/S rate.

The latest version of his work is an app which maternity units all over the world can access for information and training. Maternity staff can input their own local information becoming part of a very large study. They can discuss this important question with colleagues engaging with the same issues and contribute to an international resource.
See https://robson-classification-platform.srhr.org/about.

than 50% of audited cases. This shows the need for more regular audits, training and updating on adherence to the standard criteria for best practice to improve the quality of obstetric care.

Acknowledgments: We wish to acknowledge MNH for provision of a conducive environment to conduct the study.

Disclosure: The authors reported no conflicts of interests.

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