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Enhanced Recovery after Caesarean Section, Madagascar

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INTRODUCTION & AIM: Few hospitals practice enhanced recovery after caesarean section. Our aim was to evaluate the application of enhanced recovery after caesarean section after implementation in our service.

MATERIALS AND METHOD: An observational audit prospective was conducted, from November 2018 to January 2019, in the Complex Mother-Child Military Hospital, Antsiranana. Patients between 18 to 35 years, ASA 1 or 2 before surgery were included. Patients undergoing general anesthesia procedures were excluded from the study.

RESULTS: Thirty-one patients were identified. Each received antibiotic prophylaxis and prevention of postoperative nausea/ vomiting and intrathecal morphine. Fluid infusion was optimized in 18 patients. In post-interventional recovery room, multimodal analgesia were given orally after the intervention in 15 patients (48%), Sixteen (52%) cases drunk. Forty-four patients (45%) ate food four hour after intervention. Stop infusion performed in 13 cases (42%). The bladder catheter removed in 13 patients (42%). The median length of stay was 3.5 days.

CONCLUSION: Early food, removal of the bladder catheter and the infusion stop have low compliance to the protocol. An audit and formation were needed.

KEYWORDS: Caesarean Section, Enhanced Recovery, Audit, Assessment

INTRODUCTION

Enhanced recovery after caesarean is less widely practiced.^{1,2} In Madagascar, Rafanomezantsoa et al. start this protocol in a public hospital.³ Length of stay after caesarean section was 5 days before implementation. In our service, this method was effective for all patients who have undergone surgery since the 01st October 2018. Our aim was to evaluate the application of this enhanced recovery after Caesarean section in our service.

Material and Methods

A prospective observational study audit was performed, over a period of three months from November 2018 to January 2019, in the Complex Mother-Child, Hospital Military Antsiranana. We included women operated for Caesarean section, 18 to 35 years, emergencies or planned, with or without comorbidities stable before surgery. Under general anesthesia procedures were excluded. Preoperative fasting was respected, antibiotic prophylaxis (cefazolin[®] 2 g) were administered. Intraoperatively, prevention of nausea and postoperative vomiting with dexamethasone 8 mg was performed preoperatively, followed by ondansetron after surgery. Spinal anesthesia used isobaric bupivacaine and fentanyl and morphine. Crystalloid is limited to 500 ml. Oxytocin[®] was used to prevent

postpartum hemorrhage after clamping cordon. The contact skin-to-skin is encouraged if the state of newborn permits. In post-interventional recovery room, multimodal analgesia (paracetamol 1 g * 4, ketoprofen LP 100 mg * 2) were given orally one hour after surgery. Patients drunk unlimited quantities at the first hour, and light meal before the fourth hour after the procedure. the bladder catheter and stopping infusion were removed. In the dining room, patient walked in the sixth hour. Venous thromboembolism is prevented using enoxaparin dose of 100 IU / kg. Every item were evaluated. The hospital length of stay of mother – newborn were registered. The results are expressed as mean ± standard deviation for quantitative variables, the number (percentage) for discrete variables.

RESULTS

Thirty-one cases (31) of caesarean sections were included in the study period. The average age was 31 ± 5 years (table 1). Preoperatively, all patients received prophylactic antibiotics (100%). Fasting preoperative was recorded in 27 cases (87%). Intraoperatively, each (100%) benefited from the prevention of postoperative nausea vomiting, oxytocin and spinal anesthesia. The optimization fluid were performed in 18 cases (47%).



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Eight newborns (26%) were admitted to intensive care unit of neonatology. There was a skin-to-skin contact mother-newborn in 24 cases (74%). In recovery, the removal of the bladder catheter and the infusion stopped are carried out in 13 cases (42%). Multimodal analgesia orally was taken in 15 (48%) patients. Sixteen (52%) drunk and 14 (45%) ate before the fourth hour, and each at the sixth hour. All of them were mobilized before the sixth hour (100%). No patient presented urinary retention. Prevention of venous thromboembolism was systematic. The median Stay of the newborn & mother stay was 3.5 days (3-5.5) including 5 cases (16%) that were discharged from the hospital on the second day (table 2).

DISCUSSION

This prospective study showed the feasibility of intrathecal morphine, wherein oral analgesia, early feeding, stop infusion and removal of the bladder catheter post interventional treatment room were difficult to access. The median duration of mother-newborn stay was 3.5 days.

The addition of intrathecal morphine were systematically; a comparable study authors.⁴⁻⁶ It was higher than Pujic et al 18%.¹ The perispinal morphine is the gold standard during a caesarean section. It covers the pain until the twenty-fourth postoperative hour.⁷

Multimodal analgesia is administered orally in 48%; against 7% Wyniecki et al.² Deniau B et al. had a higher compliance.⁶ Early feeding was the barriers in our study.

Stop infusion was observed in 42%; this result was similar with some authors.^{5,8} It was above for Pujic et al.¹ The administration of intravenous self-controlled infusion were the main barriers.²

The urinary catheter is removed within 42%; This result is superior to surveys conducted by some authors less than 5%.^{1,2} Cattin et al. showed a proportion rate of 32%.⁵ Laronche et al. have applied this protocol in 70%.⁹ This discordance could be explained by the fear of urinary retention and the maintenance of intravenous infusion.

Fifty-two percent (52%) were found to be drunk in the postoperative recovery room; this result was supported by Deniau et al.⁶ But, it was superior to other studies

around 10% to 38%.^{1,2,9} But it was less than Cattin et al.⁵ Deniau et al. showed a technical organization defect was the difficult barrier.⁶

Early feeding was 45%.^{5,6} It was superior to surveys conducted by some authors.^{1,2} Early feeding does not increase the risk of postoperative nausea, vomiting and abdominal distension.¹⁰ The barriers are due to fears of the woman in labor and education of health workers. All patients were mobilized early; it was superior to literature results.^{1,2,6} It is achievable through the removal of the bladder catheter, and training of paramedics. It authorizes an earlier physical skin-to-skin contact mother and newborn.⁴

The median length of stay was 3.5 days comparable to that study of literature.^{4,5} Wrench et al. realized the exit of patients the day after surgery and 2 days in 25.1% and 50.9% respectively.⁸ This results regarding the length of stay was one day shorter as compared to the mothers hospitalized in the present study.

This single-centre study did not show the satisfaction. But, this is the first audit conducted within the complex mother-child, Military Hospital, Antsirana. Further study would be necessary for accession to the protocol to reduce hospitalization length of stay of 48 hours or 24 hours.⁸

CONCLUSION

The enhanced rehabilitation after Caesarean is feasible in our service. However, some points can be improved, especially in the postoperative period, such as analgesia orally, removal of the IV line and the urinary catheter in recovery and early feeding. Increasing adherence to the protocol reduces the duration of mother-newborn stay.

REFERENCES

1. Pujic B, Kendrisic M, Shotwell M, Shi Y, Baysinger CL. A Survey of Enhance Recovery After Surgery Protocols for Caesarean Delivery in Serbia. *Front Med.* 2018;(5):100. Disponible sur: <http://journal.frontiersin.org/article/10.3389/fmed.2018.00100/full>
2. Wyniecki A, Raucoules-Aimé M, de Montblanc J, Benhamou D. Réhabilitation précoce après césarienne programmée: enquête de pratique auprès des maternités des régions Provence - Alpes - Côte d'Azur. *Obstétrique Befelatanana. Rev. Anesth.-Réanim. Med. Urg. Toxicol.* 2016;8(1):37-40.

CHARACTERISTIC	RÉSULTS (n,%)
Age	31 ± 5
Gestity	2 (2-3)
Classification ASA	
1	28 (90)
2	3 (10)
Caesarean section	
Elective	8 (26)
Emergency	23 (74)
Technical anesthesia	
Spinal anesthesia	
Epidural anesthesia	31 (100)
	0 (0)

Table 1. Characteristic of The Patients Undergoing Caesarean Sections

COMPONENTS	RESULTS (n,%)
Fasting preoperative	28 (87)
Antibiotic prophylaxis	31 (100)
Prevention of nausea vomiting postoperative	31 (100)
Restriction fluid infusion	18 (58)
Oxytocin	31 (100)
Skin-to-skin contact mother-newborn	24 (74)
Drinking at 1 hour	16 (52)
Eating at 4 hour	15 (48)
Oral multimodal analgesia	15 (48)
Bladder catheter removed	13 (42)
Stop infusion	13 (42)
Early mobilisation	31 (100)

Table 2. Protocol of Enhanced Recovery After Caesarean Section

et Île-de-France. *Ann Fr Anesth Réanimation*. 2013;32(3):149-56.

3. Rafanomezantsoa TA, Rakotondrainibe A, Rasoamampianina LE, Andrianirina M, Rajaonera AT, Rakotoarison RCN, et al. Réhabilitation précoce après opération césarienne au CHU de Gynécologie Obstétrique Befelatanana. *Rev. Anesth.-Réanim. Med. Urg. Toxicol.* 2016;8(1):37-40.

4. Rousseau A, Sadoun M, Aimé I, Leguen M, Carbonnel M, Ayoubi JM. Étude comparative sur la réhabilitation améliorée postcésarienne : quels bénéfices, quels risques? *Gynécol Obstét Fertil Sénol.* 2017;45(7-8):387-92.

5. Cattin A, De Baene A, Achon E, Bersot Y, Destoop Q, Pelissier A, et al. Évaluation de la mise en place d'un protocole de réhabilitation précoce postcésarienne.

Gynécologie Obstétrique Fertil Sénologie. 2017;45(4):202-9.

6. Deniau B, Bouhadjari N, Faitot V, Mortazavi A, Kayem G, Mandelbrot L, et al. Evaluation of a continuous improvement programme of enhanced recovery after caesarean delivery under neuraxial anaesthesia. *Anaesth Crit Care Pain Med.* 2016;35(6):395-9.

7. Fuchs F, Benhamou D. Césarienne et post-partum. Recommandations pour la pratique clinique. *J Gynecol Obstet Biol Reprod (Paris).* 2015;44(10):1111-7.

8. Wrench IJ, Allison A, Galimberti A, Radley S, Wilson MJ. Introduction of enhanced recovery for elective

caesarean section enabling next day discharge: a tertiary centre experience. *Int J Obstet Anesth.* 2015;24(2):124-30.

9. Laronche A, Popescu L, Benhamou D. An enhanced recovery programme after caesarean delivery increases maternal satisfaction and improves maternal-neonatal bonding: A case control study. *Eur J Obstet Gynecol Reprod Biol.* 2017;210:212-6.

10. Huang H, Wang H, He M. Early oral feeding compared with delayed oral feeding after cesarean section: a meta-analysis. *J Matern Fetal Neonatal Med.* 2016;29(3):423-9.

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