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Professional Paper

IMPLEMENTATION OF ERAS PROTOCOL FOR CESAREAN SECTION

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SUMMARY – Summary: In the past few decades, many changes have been noticed in all medical branches, especially in surgery. Enhanced Recovery After Surgery (ERAS) is a completely new approach, with the main goal to change the period of patient's recovery, making perioperative time easier and shorter. The patient's recovery is faster, better and the patient's satisfaction is bigger. Patients have an active role in their own recovery, which results in faster return to work and everyday activities. Hospital Length of Stay (LOS) is shorter and associated with concomitant financial savings.

After ERAS protocol had been implemented in colorectal, abdominal surgery, urology orthopedic and oncology, and finally in obstetrics for cesarean section as well. This protocol has mostly been used in developed countries, but not in all hospitals. Creation and implementation of ERAS protocol is hard work, which includes multidisciplinary team work and especially a team leader, who coordinates the medical team, the patient and hospital management. Conclusion: Creation of an ERAS protocol is very serious and long- lasting work. It is multidisciplinary and it usually has to be individually tailored for each institution itself in coordination with the health care system and with the final implementation in the medical system.

Key words: *Obstetrics, cesarean section, recovery, fast track surgery*

Introduction

In the early nineties, the first ERAS protocol was established in Scandinavian hospitals, to help patients who had been prepared for colorectal surgery. The protocol was very successful and revolutionary in surgical practice and at the end of XX century and beginning of XXI century; this new approach was created in urological surgery, gastrointestinal, oncology (breast surgery, gynecological surgery), and pancreatic surgery, thoracic and cardiac surgery. [1-9]

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At last, obstetricians realized that it could be implemented successfully for Cesarean Section (CS), which is the most common surgical procedure in obstetrics. Nine years ago, the first articles about ERAS for CS were published in the literature[10,11,12]. Some hospitals in developed countries (UK, US and Germany) started with the new protocols. Results were incredibly good and many hospitals around the world started to tailor the protocols specially adjusted for the conditions in their hospitals.

The process of protocol creation is very hard and it requires a few months from planning to implementation.

This is a multidisciplinary process, which includes a team leader, who has to coordinate different mem-

bers of the team and hospital management. Members of the team are a surgeon (in our case obstetrician), an anesthesiologist, a nurse (midwives, anesthetist and post- operative care nurse), a pediatrician and the most important member is the patient (in our case parturient). The patient has an active role in the healing process and her own faster recovery.

ERAS protocol creation

Firstly, the team leader needs to select the team members and together they make a future strategy. Team leader always coordinates hospital management and team members. In the developing countries and middle- income countries the healthcare system is different than the one in developed countries and the creation of a new program actually means a hospital- tailored program, specific for every hospital and country.

It is very helpful to conduct an observation study, by sending emails with a questionnaire to every hospital in the country in order to find out more about their practice and the parts, which need to be improved. Pujic and al. published in 2018 article about ERAS protocols in Serbian hospitals. In conclusion, it was said that in Serbian hospitals, there were no ERAS protocols established, but at some hospitals, they found out that some ERAS elements were in use[13]. That was the starting point from which they began thinking of the changes in everyday practice.

The protocol creation starts with the written instructions for all team members and the explanation what needs to be done by each one. The obstetrician has to randomize the parturient for the program, to explain and educate them during the pregnancy and to inform them what to expect both during their labor and during delivery by CS and after the delivery, in the postoperative course. ERAS is not eligible for every parturient- it is reserved for healthy mothers or the ones with mild coexisting disease (where post- operative complications or longer in- hospital stay is not expected).

The obstetrician has to perform minimally invasive surgery (without uterus exteriorization), delayed cord clamping, skin-to-skin contact between mother and baby and no drains and tubes.

Instructions for the anesthesiologist include how to prepare the parturient to be in the best health condition before CS (especially if some co- existing disease is present). Parturient has to finish pre- anesthesia assessment several days prior to the scheduled CS (minimum two days earlier). In the pre- anesthesia clinic, the parturient has to sign the written consent and receive written instructions.

There are also instructions for premedication, preemptive analgesia, and a type of anesthesia (regional anesthesia is preferred here). Intraoperative course suggests phenylephrine for hypotension correction (rather than fluids) and multimodal approach for postoperative pain treatment.

Instructions for pediatricians are focused on delayed umbilical cord clamping, early skin-to-skin contact and early breast-feeding.

Instructions for postoperative care nurses are focused on early starting with drinking and feeding; early ambulation, urinary catheter removal on the postoperative day 0 (POD0). On the POD1 parturient is encouraged to eat solid food, has no IV lines and starts to breastfeed the baby.

For the parturient, CS preparation is explained, as well as hospital admission time, preoperative fasting and drinking instructions, preemptive analgesia, no bowel preparation, type of anesthesia, surgical technique, delayed umbilical cord clamping, first skin to skin contact with the baby, postoperative pain management, first drinking and eating after the CS, first ambulation, IV and oral pain medication, urinary catheter removal, IV line removal and LOS. They are encouraged to walk three times per day minimum, to sit up three times per day minimum and to take a shower.

This part is vital in the new concept, because patient's education is a completely new approach in obstetrics. The main goal is the patient's satisfaction and their wish for a faster recovery. For the first time, the parturient has an active role during the complete perioperative time.

ERAS protocol implementation

After the protocol creation and Ethics Committee approval, the next step is the implementation in the hospital practice. This is the hardest part however. Only a strong wish to help mothers and their babies, gives team leader and the team members strength to be persistent in the realization of the ideas into practice. The University Clinical Center Vojvodina (UCCV) and Gynecology and obstetrics hospital in Novi Sad is the only hospital where ERAS protocol was implemented in Serbia, 3years ago. With many obstacles in the beginning, with the whole team persistence and tenacity nowadays it is a completely accepted protocol by all

hospital structures. Hospital management is satisfied because LOS of 3 days following CS resulted in concomitant financial benefits. There were no more postoperative complications after protocol implementation (wound infection, post- dural puncture headache, peripheral nerve damage) and no more hospital readmissions. This ERAS protocol raised hospital ratings and the parturient recognized changes. Patient satisfaction is much better compared to the period before ERAS was established. Positive feedback from the parturient is the most important part. They recommend it to their friends and relatives, with the explanation that CS is nowadays easier (compared with previous CS), pain control is much better, recovery is faster and the returning to normal activities is easier. The whole team is satisfied, because the obstetricians have happy patients, anesthesiologists have painless patients, nurses have patients with no complaints, with no urinary catheter and IV lines, with oral medication in POD1-3.

Discussion

Society for Obstetric Anesthesia and Perinatology (SOAP) recognized needs for ERAC protocol (Enhanced Recovery After Cesarean) in obstetrics to improve patient recovery after CS, which resulted with the SOAP statement in 202014. In recent years, mostly in developed countries, sporadically similar protocols have been created[15]. In developing countries, low and middle- income countries (like Serbia) ERAS protocol in obstetrics does not exist. In Serbia, Pujic et al. published an observational study about knowledge about ERAS and possible ERAS protocols. Questionnaire was emailed to all Serbian hospitals, with answers from obstetricians and anesthesiologists. According to results, it is necessary to create a specific protocol, tailored separately for every hospital, working conditions and health care system.

Results showed that ERAS protocol does not exist in any hospital (secondary or tertiary) and the idea was to create a new one in University hospital in Novi Sad[13].

Conclusion:

Implementing a new protocol is hard work and needs a lot of energy. Crucial is coordination between hospital management and multidisciplinary team leaders. In the end, it has multiple benefits for the parturient, hospital staff and health care system.

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Sažetak

IMPLEMENTACIJA ERAS PROTOKOLA ZA CARSKI REZ

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U posljednjih nekoliko desetljeća došlo je do velikih promjena u svim granama medicine, a posebno u kirurgiji. Enhanced Recovery After Operation (ERAS) potpuno je novi pristup, čiji je glavni cilj skratiti vrijeme oporavka pacijenta, biti brži i kvalitetniji, te učiniti pacijenta zadovoljnijim. Pacijent aktivno sudjeluje u svom oporavku, što rezultira bržim povratkom na posao i dnevnim aktivnostima. Duljina hospitalizacije je kraća, što smanjuje troškove liječenja.

ERAS je prvi put primijenjen u kolorektalnoj kirurgiji, urologiji, abdominalnoj kirurgiji, ortopediji i onkologiji, te konačno u opstetriciji. ERAS protokoli se koriste uglavnom u razvijenim zemljama, no ne u svim bolnicama. Njegova izrada i provedba težak je posao, koji zahtijeva multidisciplinarni pristup. Uvijek postoji voditelj tima, čija je zadaća koordinacija članova tima, pacijenata i uprave bolnice.

Zaključak: kreiranje ERAS protokola je ozbiljan i dugotrajan proces.

Multidisciplinaran je i obično se mora kreirati za svaku ustanovu posebno u koordinaciji sa sustavom zdravstvene zaštite i konačnom implementacijom u zdravstveni sustav.

Ključne riječi: *opstetricija,carski rez, brzi oporavak*