

The ACERTO Project Changing Paradigms of Perioperative Care in Hip Orthopedic Elderly Patients in Brazil

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Abstract

The ACERTO project is a Brazilian multimodal perioperative care protocol based on evidence. ACERTO is na acronym in Portuguese for Enhancing Total Postoperative Recovery (Aceleracao da Recuperacao Total Pos-Operatoria). At the same time, ACERTO is a word in Portuguese meaning in English: “do it right” or “hit the taret” [1]. Implemented in 2005, the project in the last 15 years disseminates the idea of a modern protocol of perioperative care based on evidence and with multi professional performance [2,3]. The concepts of fast-track were created during the eighties by Kehlet and Wilmore [4]. The ERAS (Enhanced Recovery after Surgery) group improved it in the beginning of this century [4]. By definition, fast-track protocol was the combination of several perioperative care techniques in elective surgery such as epidural or regional anesthesia, minimally invasive surgery, adequate pain control, aggressive postoperative rehabilitation, early oral/enteral postoperative refeeding, and early postoperative mobilization [4]. In June 2010, when starting activities in a hospital of the Brazilian Public Health System (SUS), due to being an orthopedic emergency hospital and with few ICU vacancies, it was proposed to implement the ACERTO Project for elderly patients (> 60 years) with fracture hip, resulting in a recent publication of 10 years of experience with this group of patients [5].

Keywords: ACERTO; Spinal anesthesia; Hip fractures

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Introduction

History

The ACERTO project is a Brazilian multimodal perioperative care protocol based on evidence. ACERTO is na acronym in Portuguese for Enhancing Total Postoperative Recovery (Aceleracao da Recuperacao Total Pos-Operatoria). At the same time, ACERTO is a word in Portuguese meaning in English: “do it right” or “hit the taret” [1]. Implemented in 2005, the project in the last 15 years disseminates the idea of a modern protocol of perioperative care based on evidence and with multi professional performance [2,3]. The concepts of fast-track were created during the eighties by Kehlet and Wilmore [4]. The ERAS (Enhanced Recovery after Surgery) group improved it in the beginning of this century [4]. By definition, fast-track protocol was the combination of several perioperative care techniques in elective surgery such as epidural or regional anesthesia, minimally invasive surgery, adequate pain control, aggressive postoperative rehabilitation, early oral/enteral postoperative refeeding, and early postoperative mobilization [4]. In June 2010, when starting activities in a hospital of the Brazilian Public Health System (SUS), due to being an orthopedic emergency hospital and with few ICU vacancies, it was proposed to implement the ACERTO Project for elderly patients (> 60 years)

with fracture hip, resulting in a recent publication of 10 years of experience with this group of patients [5].

Elderly in Brazil

According to the World Health Organization (WHO), the elderly is every individual aged 60 or over. The Brazilian population is aging. In 1980, Brazil had less than 1 million elderly people, by 2020 this number wil be 19 million elder according to the Brazilian Institute of Geography and Statistics (IBGE) [6]. In 2060, this population may reach 19 million people over 80 years old [6].

Hip Fractures in Elderly Patients

The incidence of elderly hip fracture has been rising globally every year due to increase in the average life. Osteoporosis represents a public health problem, since it increases the risk of femur fracture in the elderly, a condition with high morbidity and mortality and high costs. During the period of six years 224 Fourth Age patients underwent surgery for a fracture of the hip, of whom 73% were women and 27% were men [7]. The risk for men is about a third compared to women [7]. In a recent systematic review and metaanalyse early hip surgery within 48 hours was associated with lower mortality risk and fewer perioperative complications [8]. In systematic review and meta-analysis comparing non operative

management and operative management (OM) of hip fractures in patients above 65 years, demonstrated that only a few studies with small number of patients were published [9]. Our study groups prefers operative handling [5,7].

Abbreviation of Fasting

In 1988, in a Letter to the Editor, I questioned whether the 6-hours fast was really necessary [10]. And I concluded by saying that once again some concepts in Anesthesiology should be questioned and reassessed. Only many years after the abbreviation for fasting began to be questioned. The changing from traditional preoperative time of 6 to 8 hours to the new protocolo of 6 hours for solid but 2 hours for clear beverages containing carbohydrates (CHO) was initiated in Brazil by the ACERTO project team constituted by surgeons and anesthesiologists [1-3]. In the last years we have been using beverages containing not only CHO but also nitrogenous source. The use of either glutamine or whey protein in these preoperative beverages has shown to be safe and most effective for reducing insuline resistance and incresing muscle strength after surgery i some studies [11]. Studying 375 pacientes with an average fasting time of 4 hours concludes that adopting the multidisciplinary preoperative measures of the ACERTO project was not associated with any preoperative fasting-associated complications [12]. Dextrin maltose is a useful and safe nutritional supplement for the patient. With the implementation of the ACERTO project in elderly patients with hip fractures, there was a decrease in fasting from 13:38 hours to 2:53 hours (decrease of 81%), with 96% of patients not reporting hunger and 99% not reporting thirst [5].

Anesthesia

Spinal anesthesia is an established technique for orthopedic surgery, especially in elderly patients [13,14]. Low-dose (7.5 mg) of isobaric bupivacaine provides adequate spinal anesthesia for surgical repair of hip fracture and / or hip in elderly patients compared with the full dose (15 mg) of the same solution, causing dramatically less hypotension and eliminated the need for the use of vasopressor to control [14]. This low dose gave less cephalad spread, shorter motor block, and shorter PACU stay.

Postoperative Analgesia

Pain control is essential to improve the recovery of orthopedic and elderly patients by providing earlier discharge. Regional blocks with neurostimulador or ultrasound applied at the hospital or for postoperative analgesia are considered the gold standard in pain management gold in the treatment of pain before, during and after surgery, reducing the need for intravenous administration of opioids and providing better results, without the adverse effects of opioids. Continuous plexus block has been increasingly used, showing that it reduces the need for parenteral administration of opioids analgesics [15]. The safety of continuous plexus block is based on the increased of the neurostimulator and ultrasound and on the introduction of unique enathiomeric local anesthetic

(ropivacaine and levobupivacaine) in low concentrations. Continuous peripheral nerve block has been routinely indicated in some services; and bilateral continuous psoas compartment block was recently published [15]. The continuous bilateral peripheral nerve block with infusion of 0.1% bupivacaine with elastomeric pump is a safe and effective procedure in bilateral total hip arthroplasties. It is possible to discharge the patient to their home with a catheter, but it is necessary to provide adequate education for the team, patient and family, in addition to having a multidisciplinary team dedicated to the control of postoperative pain.

Evaluated Parameters

The implementation of the project in elderly orthopedic patients resulted in a shorter hospital stay, decrease suspension of surgery, the use of drains and bladder catheter, use of blood transfusion, length of stay in the PACU and reintroduction oral feeding [5]. And finally, the abbreviation of fasting and the earlier return to the home increases patient and family satisfaction [16].

Conclusion

The ACERTO project aims to assist in the implementation of the improved recovery of practices to improve results in a sustainable manner. The program has tools designed to assist with implementation and also a data record that includes a relevant process and outcome to help hospitals monitor the effectiveness and impact of these protocols. The ACERTO project, based on evidence in the surgical treatment of patients, consists of defining, monitoring and disseminating the care of patients, especially elderly people with femur fractures.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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