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This paper aims to present Polish recommendations for the acute pain management which have been created and introduced within the last few years. Introduction of the accompanying national project “Pain-free hospital” was a success, with many dedicated hospitals that have joined the project. It provides assistance in organizing acute pain management teams and training of the medical professionals in this regard. We also describe our own experience with utilizing the above recommendations.

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consisting of adequate preoperative assessment, use of pain severity scales, e ective utilization of existing resources and sta training in order to achieve good quality of multimodal analgesia, early mobilization, early enteral nutrition and physiotherapy [1,6].

Pain management standards in Poland *(. P : M ,* et al.: *2011)* [8]

Education

Vital part of perioperative pain management is to adequately inform the patient which can be achieved by counseling, as well as printed information lea ets on postoperative pain and methods of pain management.

Pain severity assessment – it is recommended:

- To assess and document pain intensity in patient's clinical notes at rest and during mobilization,
- To use pain severity scales: NRS (*N R*), VAS (*A*), PHHPS (*P , P*)
- Pain scales should be chosen according to our experience with their use, type of surgery (operated area), whether it is well understood by the patients and its applicability to either resting or mobile patients, or both,
- For children and non-cooperative patients it is preferred to use Faces Pain Scale (FPS) and neurobehavioral scales.

Systemic analgesia

Either arbitrarily set or "as required" administration of opioids does not provide e ective analgesia in immediate postoperative period. It is also crucial to choose appropriate route of administration. Hypovolaemia, hypothermia and postoperative or trauma - related blood redistribution may a ect the absorption of subcutaneously or intramuscularly injected painkillers, which would result in ine ective analgesia, in spite of the administration of adequate dose.

erefore the intravenous route for the administration of analgesics should be preferred postoperatively, especially a er major surgery. Titrating method allows for maintenance of minimal e ective analgesic concentration (MEAC) throughout the postoperative period (continuous infusion or patient controlled analgesia - PCA).

Most commonly used painkillers are paracetamol, metamizole, non-steroidal anti-in ammatory drugs (NSAIDs), weak and strong opioids and local anesthetics with or without coanalgesics.

ey all could be used alone or as a part of multimodal analgesia regime, for accurate use of all available points and modes of action with minimal risk of side e ects. Possible drug interactions are readily avoided when pharmocodynamics and pharmacokinetics of drugs are properly acknowledged.

Patient – Controlled Analgesia

Opioid – based, intravenous patient – controlled analgesia (PCA) is known to provide analgesia superior to other regimes, which use conventional parenteral routes of administration (5 mm in VAS 0-100 mm scale – on average), as well as better patient satisfaction. Nevertheless, it does not allow for reduction of overall opioids dose and does not result in reduced incidence of side e ects.

Local anesthesia techniques

Conduction anesthesia techniques are employed for postoperative analgesia once patient condition, type and grade of surgery is considered. Properly chosen central and regional nerve blocks improve pain control while mobilizing, pain related to deep breathing, physiotherapy and nursing.

Central nerve blocks

- Postoperative epidural analgesia has proven to be more e ective than systemic opioid analgesia,
- Epidural analgesia with local anesthetic alone or with added opioids may reduce the incidence of some respiratory complications, like atelectases, improve gas exchange, decreas rate of chest infections and paralytic ileus,
- oracic epidural analgesia, when combined with early enteral nutrition reduces the protein wasting postoperatively, as well as the incidence of peripheral thrombosis,
- e best possible option for the postoperative pain management is the use of local anesthetic with added lipophillic opioid. is approach reduces the prevalence of side e ects when compared to use of local anesthetics, alone or with added morphine,
- Neuraxial blocks and anticoagulation – European Guidelines are adopted to Polish standards by Regional Anesthesia Task force of Polish Society of Anesthesia and Intensive Care.

Continuous nerve blocks techniques

Prolonged analgesia with continuous nerve blocks o ers the reduced incidence of complications when compared to neuraxial analgesia, in case of which the epidural hematoma and abscess are th known threat.

Multitude of randomized trials has advocated their e ectiveness, pointing to some bene cial e ects for patients and reduced occurrence of side e ects. Clinical trials have shown that a er major orthopedic surgeries of the limbs, the regional nerve blocks are equally e ective as continuous epidural analgesia. Both of the aforementioned procedures are more e cacious than intravenous opioids. Regional anesthesia should also be used in patients with multiple comorbidities, in order to decrease the dose of sedatives and opioids.

Patient – controlled regional anesthesia

PCRA is more e ective than continuous infusion in providing postoperative pain control and creating conditions for postoperative physiotherapy. It is recommended to use PCRA for continuous anesthesia and continuous surgical site in ltration. Local anesthetic solution may be used in bolus doses alone or as boluses on the top of background infusion. Continuous infusion may be given with the use of PCA pump, mobile electronic infusion pump or elastometric infusion pump with preset infusion rates.

Multimodal / balanced analgesia

is method is based on simultaneous and continuous use of various medications and methods perioperatively (preoperatively, intraoperatively and postoperatively). It employs multiple techniques to suppress nociception and facilitate continuous modulation of nociceptive transmission. It e ects in better quality of analgesia and lower doses of painkillers used, therefore causing less side e ects.

Pain Management Depending on the Grade of Surgery – Polish Recommendations.

Grade 1 surgery

Minor super cial procedures, minor orthopedic and gynecological surgery (day case surgery), which are linked to postoperative pain severity of NRS<4.

Before surgery: e use of following drugs should be considered to induce the e ect of preemptive analgesia:

- Metamizole (1-2,5 g) i.v.

7. Elvir-Lazo H, White PE (2010) The role of multimodal analgesia in pain management after ambulatory surgery. Curr Opin Anaesthesiol 23: 697-703.

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