The efficacy of Infulgan in perioperative pain management in oncology

Annually, approximately 170,000 people in Ukraine are newly diagnosed with malignancies. Subsequently, 32.5% of them are subjected to combined or multimodal therapy, and 35.3% of patients receive only surgical treatment, which requires postoperative pain relief. Special aspects about patients with cancer are that in most cases they are elderly people, who have a range of chronic conditions, as well as that the underlying disease and chemotherapy and radiation therapy, given before surgery (neoadjuvant), cause homeostatic disorders, requiring a careful approach to the choice of pain management methods in the postoperative period. Postoperative pain relief remains an important issue. Currently, about one third of patients after surgery, despite the given analgesia, indicate pain of varying severity. However, ongoing replenishment of the analgesics arsenal with new agents still does not resolve the problem.

Obviously, there is a need in the strategies of postoperative pain management that take into account the pathophysiology of pain, the general condition of the patient, characteristics of the pharmacological profile of drugs, the possibility of combining different methods in order to improve the quality of the postoperative period course.

At present, this approach has been implemented in the concept of multimodal analgesia, involving a combination of various means and methods of anesthesia. By influencing the various links in nociception, it is feasible to achieve a more pronounced analgesic effect with lower doses of the administered agents, and, consequently, to reduce the severity of their adverse effects.

Paracetamol is a medicinal product with proven efficacy and safety, which is recommended for the application by international guidelines, such as the Acute Pain Management: Scientific Evidence (2005), Postoperative Pain Management — Good Clinical Practice (2005).

With Infulgan (YURIA-PHARM) becoming commercially available in Ukraine, it is now possible to use the infusion form of paracetamol as a component of multimodal analgesia after abdominal surgery.

The aim of the study was to evaluate the efficacy of paracetamol as a solution for intravenous infusion as a component of postoperative pain relief after abdominal surgeries in oncology.

Materials and methods of the research

The pain was assessed during the first three days after surgical interventions in 30 patients undergoing abdominal surgery, belonging to the highly traumatic group (such as gastrectomy, distal subtotal gastrectomy, lower anterior resection and abdominoperineal resection of the rectum).

Mean age of the patients was 62 years. All subjects belonged to the ASA category of risk III. The interventions were performed under general anesthesia combined with artificial ventilation (AV) by endotracheal induction using propofol or sodium thiopental, and maintaining low-flow sevoflurane anesthesia combined with fentanyl and non-depolarizing neuromuscular blocking agents. Patients with severe nutritional deficiency, hepatic and/or renal insufficiency, as well as drug addiction of chronic alcoholism were excluded from the study.

The patients were divided into 2 groups. Forty minutes before surgery, patients in both groups received conventional preanaesthetic medication, which included 1 mL of Promedol, 2% solution, and 1 mL of Dimedrol, 1% solution.

In Group I, for the entire period of observation, patients received after surgery a non-steroidal anti-inflammatory drug, NSAID, (100 mg ketoprofen i/m, twice daily) in combination with prolonged epidural analgesia using bupivacaine 2.5 mg/mL at a rate of 4 mL/h, and Promedol, 2% solution,
To alleviate pain in patients with cancer following abdominal surgery, a multimodal analgesia strategy was implemented, which included paracetamol infusion. This approach ensured adequate pain management during the postoperative period, particularly in the 48 and 72 hours following surgery. The paracetamol was administered as an intramuscular injection (1 mL, 1-2 injections) with subsequent transfer to tramadol (5% solution, 2 mL, up to two days).

To analyze the pain intensity, a Visual Analogue Scale (VAS) was utilized, with assessments conducted in 30 minutes, 3, 12, 24, 48, and 72 hours postoperatively (Table 1, Figure). The injection number, activation time, and hospital stay were also evaluated (Table 2).

No adverse effects from the paracetamol infusion were reported during the study. The administration of paracetamol in Group II led to an earlier activation of patients compared to Group I (Table 2). Duration of hospital stay did not significantly differ between the two groups (Table 2).

**Conclusions**

Multimodal analgesia, incorporating paracetamol infusion, provided adequate pain management during the postoperative period for cancer patients after abdominal surgery. The use of preventive multimodal analgesia with paracetamol allowed for a titration down of concurrent opioid analgesics and contributed to the acceleration of the rehabilitation process following abdominal cancer surgery. Paracetamol is safe for use in cancer patients.

**References**

7. Бюлетень Національного каналер-реєстру №14 – «Рак в Україні, 2011–2012». ***