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ABSTRACT

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THE IMPACT OF CANNABIS AND MEDICAL USE OF CANNABIS IN SURGICAL PRACTICE: A NARRATIVE REVIEW

Introduction. In 2024–2026, the use of medical cannabis was legalized in Ukraine, as in many other countries, but there are no recommendations on the clinical use of medical cannabis in surgical diseases and in the postoperative period.

Methods. A search was conducted for publications in the bibliographic databases PubMed; AMED; Scopus and Web of Science; Cochrane Library regarding the impact of cannabis use and the use of medical cannabis on the postoperative period after surgical interventions for the period 2021–2025. The article selection process was based on building a standard diagram of international recommendations for the preparation of systematic reviews PRISMA 2020.

Results. A total of 1925 records were identified, and after careful selection, 15 publications were included: retrospective cohort studies (n=6), narrative reviews (n=5), and systematic reviews (n=4). Among them, 6 articles were devoted to general surgery, 5 articles to bariatric surgery, 1 article to hernioplasty, 1 article to oncology surgery, 1 article to plastic and reconstructive surgery, and 1 article to cyst surgery. Three narrative and three systematic reviews were devoted to the study of medical cannabis preparations directly on the course of the postoperative period. There are no relevant randomized clinical trials in the Cochrane Library on the use of medical cannabis in surgical practice or the effect of its use on early and late complications in the postoperative period during 2021–2025.

Conclusions. One high-quality publication proved the positive effect of the use of topical medical cannabis preparations on wound healing. All others were characterized by different research methodologies, heterogeneity of sample data – separate age categories were not studied, gender differences, specific dosage forms and doses of medical cannabis were not determined. Postoperative complications were also

heterogeneous. The efficacy of medical cannabis preparations for acute postoperative pain management has not been established. There are virtually no studies in the literature that have examined long-term postoperative outcomes. Most studies examining the course of the postoperative period in patients using cannabis have shown that they require increased doses of narcotic analgesics to manage postoperative pain and have an increased risk of nausea and vomiting. Although in bariatric surgery, most studies have demonstrated the absence of complications of surgical treatment in those using cannabis, the data are still contradictory. Therefore, at present, strong recommendations for the use of medical cannabis in surgical practice, other than topical forms, cannot be made in the absence of sufficient high-quality evidence. High-quality studies are needed to draw definitive conclusions on this issue.

Keywords: medical cannabis, tetrahydrocannabinol, cannabidiol, surgery, postoperative period, pain, complications.

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ВПЛИВ ВЖИВАННЯ КАНАБІСУ ТА ЗАСТОСУВАННЯ МЕДИЧНОГО КАНАБІСУ В ХІРУРГІЧНІЙ ПРАКТИЦІ: НАРАТИВНИЙ ОГЛЯД

Вступ. В 2024–2026 роках в Україні легалізовано використання медичного канабісу, як і в багатьох інших країнах, але рекомендацій з клінічного застосуванні медичного канабісу при хірургічних хворобах та в післяопераційний період не існує.

Методи. Проводився пошук публікацій в бібліографічних базах *PubMed*; *AMED*; *Scopus* та *Web of Science*; *Cochrane Library* стосовно впливу вживання канабісу та застосування медичного канабісу на післяопераційний період після хірургічних втручань за період 2021–2025 роки. Процес відбору статей базувався на будуванні стандартної діаграми міжнародних рекомендацій для підготовки систематичних оглядів PRISMA 2020.

Результати. Загалом було ідентифіковано 1925 записів, після ретельного відбору було включено 15 публікацій: ретроспективні когортні дослідження (n=6), наративні огляди (n=5), систематичні огляди (n=4). Серед них 6 статей присвячено загальній хірургії, 5 статей баріатричній хірургії, 1 стаття герніопластиці, 1 стаття онкохірургії, 1 стаття пластичній та реконструктивній хірургії та 1 стаття хірургії кісті. Три наративних та три систематичних огляду присвячено вивченню безпосередньо препаратів медичного канабісу на перебіг післяопераційного періоду. Релевантних рандомізованих клінічних досліджень в Кокрейнівській бібліотеці щодо застосування медичного канабісу в хірургічній практиці чи впливу його вживання на ранні та пізні ускладнення в післяопераційний період упродовж 2021–2025 роки не міститься.

Висновки. Одна публікація високої якості довела позитивний вплив застосуванні топічних препаратів медичного канабісу на загоєння ран. Всі інші характеризувалися різними методологіями досліджень, гетерогенністю вибіркових даних: не вивчалися окремі вікові категорії, не було визначено статевих відмінностей, конкретних лікарських форм та доз медичного канабісу. Різнорідними також були дані щодо вивчення ускладнень

післяопераційного періоду. Не визначена ефективність препаратів медичного канабісу для тамування гострого післяопераційного болю. Практично не представлені в літературі дослідження, які вивчали довгострокові післяопераційні наслідки. Більшість досліджень вивчення перебігу післяопераційного періоду у пацієнтів, що вживають канабіс, довели, що вони потребують підвищених доз наркотичних анальгетиків для тамування післяопераційного болю, у них збільшені ризики нудоти та блювання. Незважаючи на те, що в баріатричній хірургії більшість досліджень продемонстрували відсутність ускладнень хірургічного лікування у тих, хто вживає канабіс, втім дані все ще суперечливі. Отже на теперішній час сильних рекомендацій щодо використання медичного канабісу в хірургічній практиці, окрім топічних форм, не можливо зробити за відсутності достатньої кількості високоякісних доказів. Потрібні дослідження високої якості щоб зробити остаточні висновки з цього питання.

Ключові слова: медичний канабіс, тетрагідроканабіол, канабідіол, хірургія, післяопераційний період, біль, ускладнення.

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ABBREVIATIONS

CBD – cannabidiol
THC – tetrahydrocannabinol
RCT – randomized controlled trial
NLM – National Library of Medicine

INTRODUCTION

In 2024–2026, the use of medical cannabis was legalized in Ukraine, as in many other countries, and several regulatory measures were introduced regarding its use: the registration of medical cannabis was simplified, the first cannabis medicines were registered, and programs were put in place to simplify the issuance of prescriptions for various medicinal forms of cannabis [1, 2]. Literature sources regarding the therapeutic effect of medical cannabis indicate limited research on all components of the *Cannabis Sativa* plant, and contain results of studies on the effects of the two main components – delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) [3, 4, 5]. The pharmacological properties of THC indicate its psychoactive effects, unlike those of CBD. Overall, these two components have diverse effects on the human cannabinoid receptor system, one of which is pain relief [6–9]. And though the orders of the Ministry of Health of Ukraine approved a list of diseases and conditions for which medical cannabis is prescribed, its use in surgical practice is still unclear. Since the number of literature sources related to the clinical use of medical cannabis in surgical diseases and in the postoperative period is limited, and there is a gap in knowledge regarding the clinical use of medical cannabis in surgery, the authors offer a review of publications over the past five years on this issue.

The aim of the work was to make a literature review on the use of medical cannabis in surgical practice, or the impact of cannabis use on early and late postoperative complications.

MATERIALS AND METHODS

Search methods. The search for publications was conducted in the MEDLINE bibliographic database created by the US National Library of Medicine (NLM) and the *PubMed* search engine; the British AMED database; multidisciplinary databases of *Scopus* and Web of Science; and the international evidence-based Cochrane Library.

Research design. For transparency, the article selection process was based on the PRISMA 2020 flow diagram, which outlines international recommendations for the preparation of systematic reviews (identification, screening, inclusion/exclusion) [10].

Inclusion criteria. English-language articles published in open-access journals and databases with various designs were selected for the review: retrospective and prospective cohort studies, cross-sectional studies, pilot studies, reviews (systematic and narrative), and randomized controlled trials (RCTs). Publications containing information on the use of any

medicinal form of medical cannabis (THC or CBD, or THC/CBD) or pre- and postoperative use of cannabis (cannabis users) in surgical interventions (general surgery, abdominal surgery, herniology, cyst surgery, bariatric surgery, oncology surgery, and mixed surgery) over the last five years (2021–2025) regarding relief of pain and symptoms, resolution of threatening conditions, effects on inflammation and immune response, etc. were included. Articles with open surgical interventions, minimally invasive and outpatient surgical procedures were also included.

Exclusion criteria. The review did not include articles of any design or methodology that addressed behavioral and psychiatric complications during anesthesia in individuals who abused cannabis, and articles exclusively related to surgical orthopedics, vascular, cardiac, gynecological, and maxillofacial surgery. Messages, comments, and articles with experimental studies on animals were excluded. Articles lacking full text were also excluded from the data synthesis.

The publications on the use of medical cannabis in surgical practice were analyzed using the PICO special framework for writing reviews (Population, Intervention, Comparison, and Outcome): P – surgical patients, I – dosage forms and cannabis medicines, C – focus of the study, O – results (improvement, complications, etc.) [11]. There was no time limit for making the review.

Search terms: "medical cannabis" and "surgery"; "medical cannabis" and "perioperative"; "medical cannabis" and "postoperative"; "tetrahydrocannabinol" and "surgery"; "tetrahydrocannabinol" and "perioperative"; "tetrahydrocannabinol" and "postoperative"; "cannabidiol" and "surgery"; "cannabidiol" and "postoperative", "cannabidiol" and "perioperative"; "cannabinoids" and "surgery"; "cannabinoids" and "perioperative"; "cannabinoids" and "postoperative".

RESULTS

Therefore, the first stage of this review was to select publications from 2021–2025 using keywords in the PubMed, Web of Science, Scopus, AMED, and Cochrane Library databases. A total of 1925 records were identified. To isolate purely surgical problems and further process the material, we used the PRISMA (2020) flowchart (Fig. 1). Publications were selected

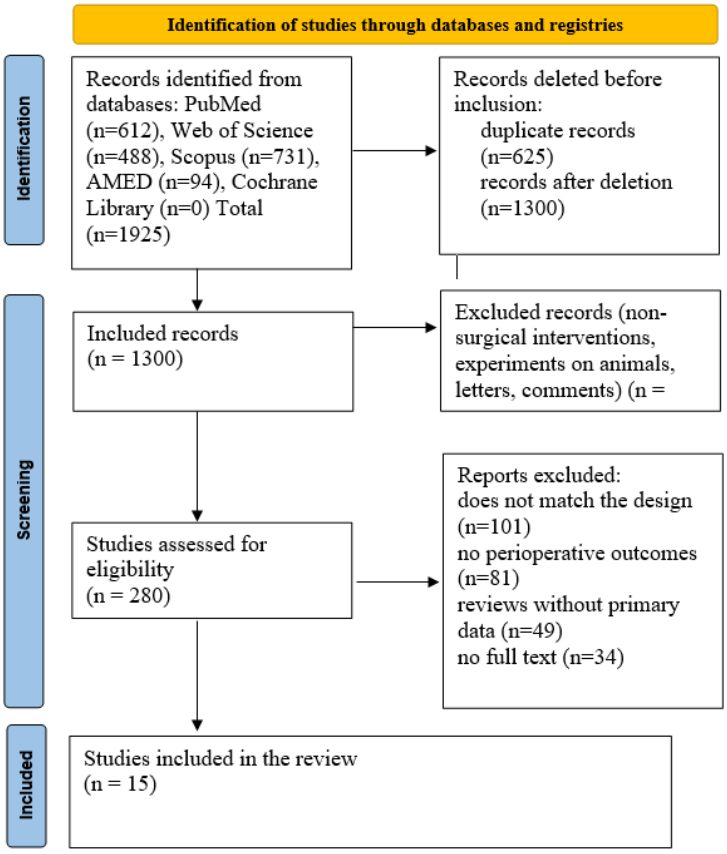


Figure 1 – PRISMA flowchart for publication selection [10]

automatically. After removing 625 duplicates (publications indexed in two or more databases), a total of 1,300 publications were retained. Of these, 1020 papers were excluded based on title and abstract, as well as for being exclusively experimental studies, notifications, comments, or publications that were not in Open Access. The full texts of 280 articles were assessed for eligibility, of which 265 papers were definitively excluded based on the exclusion criteria.

Ultimately, 15 publications were included in the qualitative synthesis (Table 1). These included retrospective cohort studies (n=6), narrative reviews (n=5), and systematic reviews (n=4).

Table 1 – Characteristics of the publications on the impact of cannabis or the medical use of cannabis in surgical practice

Author, year	Design	Population/ sample	Surgery specialty	Main conclusions
Copeland-Halperin, Libby R., et all [12] (2021)	Systematic review (including the effects of cannabis medicines on wound healing)	4 human and 8 animal studies	Plastic and reconstructive surgery	Low-quality studies; heterogeneity of cannabis medicines (topical, oral, inhaled); different doses and durations in surgical patients
Jung F., et al. [13] (2021)	Systematic review without meta-analysis (effects of cannabis use)	1167	Bariatric surgery	In sleeve gastrectomy and gastric bypass, data on the length of hospitalization and long-term outcomes are inconsistent. Weak evidence base
Worrest T., et all [14] (2022)	Retrospective cohort study (effect of cannabis use on the incidence of surgical complications)	1107 patients who underwent primary bariatric surgery	Bariatric surgery	All common general surgical complications were studied. The incidence of complications was low in both cannabis users and non-users.
Yang A., et all [15] (2023)	Narrative review (medical cannabis for acute postoperative pain)	-	Hand and upper limb surgery	Cannabis is potentially effective for treating chronic pain, but evidence for postoperative pain is insufficient.
Huang EY., et al. [16] (2023)	Retrospective cohort study (impact of cannabis use once a week)	364 patients who underwent laparoscopic sleeve gastrectomy	Bariatric surgery	There was no difference in the frequency of postoperative symptoms, length of hospital stay, number of repeat hospitalizations, or additional interventions. Need for further research.
Potnuru PP., et al. [17] (2023)	Retrospective population-based cohort study (cannabis use)	12 422	General surgery (cholecystectomy, inguinal and femoral hernia repair, mastectomy, lumpectomy) and orthopedic surgery	Increased risk of perioperative morbidity and mortality in cannabis users
Maceyko MH, et al [18] (2024)	Narrative review (cannabis use)	Contains data from 452 patients after sleeve gastrectomy and Roux-en-Y gastric bypass	Bariatric surgery	Lack of significant effect of cannabis on postoperative complications or duration of hospitalization. The data are inconsistent and of limited quality.
Carrascosa AJ, et al. [19] (2024)	Narrative review (use of cannabis medicines)	-	Including kidney surgery, lumbotomy	Conclusion: different types of interventions, small samples, different doses and medicines, different analgesia regimens, heterogeneous patients
Maskal S., et al. [20] (2024)	Retrospective cohort study (cannabis use)	288	Hernioplasty surgery (open hernia resection with retromuscular synthetic mesh)	The frequency of postoperative complications is identical. Reoperations were more common in those who used cannabis (wound complications) without excision of the mesh implant. Pain scores were worse in those who used cannabis more frequently on day 30 postoperatively, and did not differ at 6 months and 1 year.

Table 1 continued

Author, year	Design	Population/ sample	Surgery specialty	Main conclusions
Munir MM., et al [21] (2024)	Retrospective cohort study (cannabis use)	15014	Oncological surgery (esophagectomy, pneumonectomy, gastrectomy, hepatectomy, pancreatectomy, pancreaticoduodenectomy, colectomy, proctectomy)	There was no increased morbidity and mortality after complex surgeries.
Botea MO., et al. [22] (2024)	Narrative review (postoperative acute pain, use of various cannabis extracts)	-	General surgery (heterogeneous data)	Cannabis use did not relieve acute pain. RCTs are needed to evaluate different cannabis extracts in different patient groups.
Bicket MC., et all [23] (2024)	Retrospective cohort study (cannabis use, effects on acute pain)	11 314 patients	General surgery (16 types of different interventions)	Patients who used cannabis more often had moderate and severe pain at 1 week and 1 month after surgery
Niyangoda D, et all [24] (2024)	Systematic review of preclinical and clinical studies (effects of THC and CBD: topical (ointments, gels) oral/sublingual)	437 animals and 97 patients	General surgery	Medical cannabis accelerates wound healing due to antibacterial properties. The best results were seen with a THC/CBD combination (especially as a topical medicine/oils)
Goodpaster KPS., et all [25] (2025)	Narrative review (cannabis use)	-	Bariatric surgery (sleeve gastrectomy and gastric bypass)	Cannabis was not associated with most standard postoperative complications (infections, bleeding, reoperations)
González Cárdenas VH, et al. [26] (2025)	Systematic review (medical cannabis)	-	Orthopedic and general surgery	Insufficient evidence for the effectiveness of cannabinoids in the treatment of postoperative pain

It is worth noting that the Cochrane Library does not appear to contain relevant RCTs published in 2021–2025 and related to the use of medical cannabis in surgical practice or the impact of its use on early and late complications in the postoperative period. There is also a lack of high-quality evidence in the period up to 2021.

DISCUSSION

In recent years, the use of cannabis for medical purposes has gained interest due to its potential therapeutic effects. The words "cannabis" or "marijuana" are considered to be used for all components of plants of the genus Cannabis; however, the word "medical cannabis" is used for components of the Cannabis Sativa plant that are legalized and regulated for patient access. The main active ingredient in cannabis is THC, which has euphorigenic effects [27]. Cannabis use is very common, with 4.3% of the population of all countries using cannabis in 2021 [28].In 2025, the Center for Public Health published a National Report on the Drug and Alcohol Situation in Ukraine based on 2024 data. The report indicated that the most common psychoactive substance used was cannabis (54.1%) [29]. As noted by psychiatric experts, cannabis use disorders represent a very small proportion of the overall disease burden compared to other substance use disorders [30, 31].

Both THC and CBD have many different effects on the human body's endocannabinoid system. The system comprises endogenous cannabinoids, cannabinoid receptors, and enzymes that mediate the synthesis and breakdown of endocannabinoids [32]. In addition to its psychoactive effects on the central nervous system, plant-based and synthetic THC have been used for decades to treat pain, nausea, and vomiting caused by chemotherapy [33]. Another component of the Cannabis Sativa plant is CBD, which has no psychoactive effects; it is recommended for the treatment of certain genetic diseases and has a wide range of therapeutic effects [34]. The conversion of non-psychogenic CBD to psychogenic THC in the human body and during long-term storage of cannabis medicines is still an open question [35].

The results of recently published reviews: a narrative review (2025) and a systematic review (2026), which analyzed the benefits and risks of using medical cannabis for mental and neurological disorders, spastic syndrome, chronic pain, cancer, and others, suggest that the data on the risks vs. benefits is contradictory. An analysis of publications shows that there is still no accumulated data on specific forms of medical cannabis, different THC and CBD dosages and ratios, or short-term observations. Both reviews conclude that the benefits of medical cannabis use are limited and the risks for addiction and cognitive impairment are serious. Medical cannabis itself cannot be considered a universal therapeutic agent, except for a small number of genetic diseases, but rather plays the role of an adjuvant agent. Psychiatric patients, patients prescribed high doses of THC, adolescents, and young adults are particularly at risk for mental health disorders and addiction [36, 37].

Considering the effects of THC on the central nervous system, many studies focused on the use of anesthesia during surgery in patients who used cannabis. Cannabis was shown to worsen sedation when combined with other sedative drugs, leading to increased need for anesthetics for general anesthesia and opioids for postoperative pain management, and causing poor pain control. All this is explained by the mechanism of “cross-tolerance” and modulation of the endocannabinoid system [38–41].

The American Society of Regional Anesthesia and Pain Medicine published guidelines for the safe management of surgical patients who use cannabis and cannabinoids. The recommendations provide answers to nine questions. We consider some of them worth quoting: universal screening for cannabinoids should be performed before surgery and should include the type of cannabis or cannabinoid product, time of last use, route of administration, amount and frequency of use; it is recommended to postpone elective surgery in patients who have altered mental status or impairment of decision-making capacity due to acute cannabis intoxication; it is recommended to postpone elective surgery for at least 2 hours after smoking cannabis due to the increased postoperative risk of acute myocardial infarction; it is not recommended to reduce the dose of cannabis and cannabinoids in the perioperative period; it is recommended to use multimodal analgesia with regional analgesia and opioids as “rescue drugs”; opioids can be used as needed to control perioperative pain in patients who abuse cannabis [42].

Another empirical indication for the use of medical cannabis in surgical practice is its potential pain-relieving effect. Modern research on medical cannabis has proven that it can be effective in treating chronic pain, persistent cancer pain, headaches, migraines, and spastic pain. Only small studies demonstrate a limited association between the prescription of medical cannabis and pain relief [43–45]. The role of medical cannabis in the management of neuropathic pain has not been definitively determined [46]. The focus of prescribing medical cannabis in the postoperative period is acute pain. Medical cannabis is believed to have potentially minor side effects compared to narcotic analgesics. The scientific basis for the use of medical cannabis in the treatment of acute pain has not yet led to the formation of specific clinical recommendations, and existing data do not always consistently demonstrate statistically significant results in improving the condition of patients with acute pain [22].

Thus, there are currently recommendations for the perioperative management of patients who use cannabis based on the accumulated research and clinical data for planning general anesthesia and analgesia. However, there are few publications regarding the other effects of cannabis use or the use of medical cannabis on early and late complications in the postoperative period.

Our analysis of publications regarding cannabis use or the use of medical cannabis in surgical practice over the past five years allowed us to focus on 15 publications. We emphasize that only 6 out of 15 studies contained data on the use of medical cannabis; the rest contained data on the impact of cannabis use on the formation of surgical treatment complications.

The answer to the question “How does cannabis use affect surgical complications?” can be obtained through the analysis of publications presented in Table 1. Five of the 12 articles are devoted to bariatric surgery [13, 14, 16, 18, 25]. These include one systematic review without meta-analysis, two narrative reviews, and two retrospective cohort studies.

In a systematic review by Jung et al. (2021), long-term postoperative outcomes (approximately 1 year after sleeve gastrectomy and gastric bypass) were assessed; the study focused on weight loss rather than classic long-term surgical complications (internal hernias, stenoses, rehospitalization). But the authors noted that no significant differences in hospitalizations and weight loss were found between patients who used cannabis and those who did not [13]. Two other narrative reviews, by Maceyko MH et al. (2024) and Goodpaster KPS. et al. (2025), were devoted to determining the impact of cannabis use in bariatric surgery. The studies proved that cannabis use was not associated with most classic postoperative complications; however, as the authors stated, the data included in the reviews were heterogeneous and of low quality [18, 25].

A retrospective cohort study by Worrest T. et al. (2022) aimed to examine common surgical complications, including wound complications, bleeding, re-surgery, and intra-abdominal and generalized infections, within 1 month after surgery. It was

determined that cannabis use (without specifying doses and dosage forms) was not associated with an increase in surgical complications in this study and, overall, their incidence was low [14]. Sleeve gastrectomy was performed in a retrospective cohort study of 364 patients, including cannabis users. Postoperative nausea and vomiting, rehospitalizations, and duration of hospital stay were assessed, i.e. classic surgical complications (bleeding, fistulas, infections) were not the primary focus of the study. It was proven that there was no difference between patients who used cannabis and those who did not use cannabis [16].

The effect of cannabis use was also studied in hernioplasty surgery. In contrast to other publications, a retrospective cohort study including 288 patients with open hernioplasty (ventral and postoperative interventions) with retromuscular synthetic mesh implantation demonstrated that cannabis use resulted in an increased rate of reoperations due to wound complications without excision of the mesh implant [20].

Complex oncosurgical interventions were performed in 15,014 patients with oncopathology (various types of ectomies) and were studied in a retrospective cohort study by Munir MM. et al. (2024). Cumulative rates of morbidity, mortality, acute injuries of the kidneys, cardiovascular and respiratory system, and venous thromboembolism were analyzed. There was no increase in postoperative mortality among patients who used cannabis, but there was a statistically significant increase in the incidence of acute kidney injury [21].

Narrative reviews and retrospective cohort studies involving 12,422 and 11,314 patients addressed the impact of cannabis use during general surgery (major and outpatient interventions). In each of them, a wide variety of surgeries were analyzed. The study concluded that cannabis use did not relieve acute postoperative pain, and even increased pain 1 month after surgery, without increasing morbidity and mortality among those who used cannabis. Specific general surgical complications were not identified [17, 22, 23].

Three narrative and three systematic reviews were dedicated to studying the effects of medical cannabis medicines on the postoperative course directly.

The narrative review by Copeland-Halperin, Libby R., et al. (2021) provides an analysis of publications involving the main dosage forms of medical cannabis (without specifying the drugs): THC, CBD, and a combined THC/CBD medication for inhalation and oral administration, as well as for topical application. The analysis concerned the impact on the phases of inflammation – proliferation, wound healing, angiogenesis, etc. In addition, the review covered the works with animal experimental data. The authors concluded that, even though there was reason to presume anti-inflammatory and immunomodulatory effects of medical cannabis, there were few clinical studies with precise doses affecting inflammation, which made it impossible to recommend the use of medical cannabis for wound healing [12].

In a narrative review by Yang et al. (2023), recommendations for the treatment of postoperative pain with medical cannabis following cyst surgery were not definitively established. Conclusions were not drawn due to the heterogeneity of dosage forms and doses of medical cannabis medicines [15].

Another narrative review by Carrascosa AJ et al. (2024) examined the effects of medical cannabis on postoperative pain and wound healing mechanisms. In addition to THC, CBD, and their combined forms, the review included articles on the use of synthetic cannabinoids and extracts of the Cannabis Sativa plant with various routes of administration. Importantly, preclinical studies demonstrated effects of cannabis, including reductions in nociception and inflammation, promotion of wound healing, and modulation of pro-inflammatory cytokines (immunomodulatory effects). However, specific doses and duration of treatment were not determined due to data heterogeneity. Therefore, on the one hand, medical cannabis might pathogenetically accelerate wound healing, but there was too little clinical evidence to draw conclusions for its use in routine clinical practice [19].

In 2024, a published systematic review by Niyangoda D, et al. proved the effectiveness of local wound treatment using topical forms of cannabis in combination with THC and CBD [24].

In 2025, a systematic review by González Cárdenas VH et al. was published, presenting a meta-analysis of RCTs involving different types of surgical interventions and different medical cannabis medicines (natural and synthetic THC, CBD, combined THC/CBD preparations) with different routes of administration (oral, oromucosal, parenteral). Since there was no single standard for prescribing these medications in the postoperative period, the meta-analysis did not identify a specific recommended dose and regimen for medical cannabis. A meta-analysis showed that THC-containing medicines have a higher incidence of side effects (sedation, dizziness, and nausea). Since the analgesic effect of medical cannabis in the postoperative period was not convincingly proven, it cannot be recommended as a standard treatment for postoperative pain. In addition, some of the studies included in the review demonstrated that the administration of medical cannabis in the postoperative period did not reduce the need for opioid analgesics [26].

In our opinion, the results of a small qualitative study are interesting: a survey of 13 young people who were

offered various types of surgical operations and their attitudes towards the provision of pain relief after surgery. Patients chose cannabis to reduce anxiety and pain, improve mood, and demonstrated fear of taking opioid analgesics due to addiction and based on advice from their environment [47].

When comparing publications that provide results from high-quality RCTs on dosage, a specific drug, and its positive and negative effects, they pertain to chronic pain in oncology and neuropathic pain in polyetiological lesions of the central and peripheral nervous system.

Thus, a double-blind, randomized, placebo-controlled study evaluated the oromucosal cannabis extract mouth spray Nabiximols (each spray delivers a dose of 2.7 mg THC and 2.5 mg CBD) used for chronic uncontrolled pain in progressing oncological disease, which was administered 10–16 sprays per day. The effect was shown to be dose-dependent, with high doses being ineffective and less tolerated. Also, it can be recommended as an adjuvant to classical analgesia with narcotic analgesics [48]. A similar form of medical cannabis with the same THC and CBD content, but with a dosage of 6–8 sprays per day, was used to treat neuropathic pain. Symptom improvement was observed in only 30% of patients [49]. But no such studies have been conducted in surgical practice.

Research into the impact of cannabis use on the course of the postoperative period and its complications continues. While this review was being conducted, data from one prospective cohort study involving 1100 patients after abdominal oncosurgical interventions were published in 2026. Cannabis use was associated with greater postoperative pain intensity and increased opioid consumption, without a significant effect on the incidence of surgical complications [50]. And another multicenter retrospective study involving 1,596 patients after mastectomy showed a high risk of postoperative pain and wound complications in patients who used cannabis [51].

CONCLUSIONS

Among the 15 publications in the scientometric and bibliometric databases of *PubMed*, *AMED*, *Scopus*, and Web of Science in the period of 2021–2025, which were selected using the PRISMA method, 9 publications related to the study of the effects of cannabis use, and 6 of them related to the use of medical cannabis in surgical practice. One high-quality publication demonstrated the positive effects of topical medical cannabis medicines on wound healing. All other publications were characterized by different research methodologies, heterogeneity of sample data; they did not study individual age categories, did not identify gender differences, specific dosage forms, and doses of medical cannabis in monotherapy or as the THC/CBD complex. Postoperative complications were also diverse. The effectiveness of medical cannabis medicines for managing acute postoperative pain has not been determined. There are practically no studies in the literature that studied long-term postoperative consequences. And, most importantly, it is impossible to single out a specific type of surgery and surgical methods in most publications, as one can predict the variability of cannabis effects depending on the specific clinical context.

Most studies examining the course of the postoperative period in patients who used cannabis demonstrated the need for increased doses of narcotic analgesics to relieve postoperative pain, increased risks of nausea and vomiting, and the risk of developing acute renal failure. Although most studies in bariatric surgery found no complications after surgical treatment in those who used cannabis, the data are still inconsistent. Therefore, at present, strong recommendations regarding the use of medical cannabis in surgical practice, other than topical forms, cannot be made due to the lack of sufficient high-quality evidence. RCTs are needed to draw definitive conclusions on this issue.

STUDY LIMITATIONS

The authors conducted a narrative review. Although the authors used a PRISMA-structured approach to search for sources, keywords, and specific scientometric and bibliographic databases, and to analyze study designs, they did not conduct a systematic review with meta-analysis. The authors note that the small number of publications and the heterogeneity of the data presented in them would not allow for a quantitative analysis (meta-analysis) of the use of medical cannabis in surgical practice. The authors also consider the five-year interval during which the search was conducted a limitation of the study. The authors consider the combination of the analysis of cannabis use and its medical use to be a limitation; however, the strength of the review is that the observation of patients who use cannabis and their postoperative course can be a starting point for new studies, including those on the use of medical cannabis.

PROSPECTS FOR FUTURE RESEARCH

Despite the increasing number of publications, the evidence base on the effects of cannabis on surgical outcomes remains fragmented. Further RCTs should address key methodological limitations. Separate RCTs should be conducted among patients who use cannabis and those who use medical cannabis. Synthetic and natural cannabis preparations should be assessed.

AUTHOR CONTRIBUTIONS

Riga A. S. – research idea, conducting the PRISMA approach, analysis of literary sources on surgery published in 2021–2025 included in the study, writing the primary manuscript.

Dudnichenko O. S. – analysis of publications published in 2021–2025 on oncology surgery and search for a randomized clinical trial on the use of medical cannabis in oncology.

Riga O.O. – Table design according to PICO special structure, analysis of publications on pain.

Kryvoshapka O.V. – selection of search terms, analysis of publications on the use of medical cannabis, its components, and dosage forms.

All authors contributed to drawing the conclusions and creating the final text of the article.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

ARTIFICIAL INTELLIGENCE DISCLOSURE

The authors used ChatGPT (OpenAI, 2026) to conduct a PRISMA-based review of publications from 2021–2025, but all selected articles were ultimately reviewed by each author.

ETHICAL CONSIDERATIONS

The study was conducted without involving human subjects.

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