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SUMMARY

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MATRIX METHODS IN PHARMACEUTICAL MARKETING MANAGEMENT AND STRATEGIC ANALYSIS

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On the example of the pharmaceutical company “IP Group”, for the first time, on the Georgian pharmaceutical market, in order to properly distribute resources, a study was carried out on the strategic analysis and planning of the business portfolio, on the marketing variables of retrospective data.

Recognized matrices were tested as research tools, based on which, by analyzing the principle of sufficiency and cause-and-effect relationships and etc.

“Spatial and non-spatial” matrix tools adapted to the product/company strategy were tested for the first time, the results of which were mainly correlated, both by analyzing desk and field data of natural indicators of imports and sales, as well as linear - ABC, 5 P and rectangular matrices - BCG Matrix; Using a SWOT Analysis.

From the recognized methods of marketing research, options tailored to the needs were selected and combined, which may also be successfully used in the analysis of such statistics and databases, when there is not a large range of marketing variables, a high degree of reliability, when as a limiting factor of the research, the scarcity of public business information and there are objections to access to reporting data without commercial risks.

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ACUTE POSTOPERATIVE PAIN PREVALENCE, CHARACTERISTICS AND PAIN MANAGEMENT IN HOSPITALS

TSMU, DEPARTMENT OF EPIDEMIOLOGY & BIostatistics¹, DEPARTMENT OF PROPEDEUTICS², DEPARTMENT OF ONCOLOGY³; NATIONAL CENTER FOR DISEASE CONTROL AND PUBLIC HEALTH⁴

INTRODUCTION: Every year, millions of people undergo surgery and experience postoperative pain at various levels. Although possibly life-saving, surgery is also associated with potential harm, which frequently includes pain during and after the procedure. It has been reported that nearly three quarters of patients undergoing surgical interventions have acute pain, and that 20% to 80% of postoperative patients experience pain during the first 24 hours after undergoing operation. [1,2].

Various preoperative, intraoperative and postoperative interventions and management strategies are available for reducing and managing postoperative pain [3,23,25]. Despite improved understanding of pain mechanisms, increased awareness of the prevalence of postsurgical pain, advances in pain-management approaches, and other focused initiatives aimed at improving pain-related outcomes in recent decades, inadequately controlled postoperative pain continues to be a widespread, unresolved health-care problem [1,23].

Acute pain has been commonly reported across many different surgery types, including both hard- and soft-tissue surgeries, even after administration of analgesic medication after surgery [4-7].

Goal and Objectives: The purpose of the study was to determine prevalence of acute postoperative pain (APOP), its characteristics and quality of pain management in hospitals on the basis of the respective literature review. Demographic as well as pain and surgery type data were chosen for the identification of pain patterns and characteristics.

Methods: SCOPUS, ScienceDirect and PubMed/Medline databases for the last 15 years were searched for the entry. The search criteria for the inclusion were acute post-surgery pain, acute postoperative pain, adults aged over 18, prevalence, characteristics of pain and patient’s satisfaction with the level of pain relief for the assessment of APOP management quality. According to the study topic preference was given to large studies, systematic reviews and meta-analysis.

Results and Discussions: The literature review showed that the prevalence and management of postoperative pain has become a global concern. Considerable evidence has revealed that despite increasing efforts and policies to enhance the pain management of surgical patients, severe and enduring pain continues to be endemic in clinical settings and a serious consequence of surgical intervention worldwide [8-11,12,23]. Prevalence of acute postoperative pain described in the literature vary considerably; in a Brazilian study with 187 patients undergoing surgeries the prevalence of pain in the first 24 postoperative hours was 46%, considering all degrees. In an intuitional prospective longitudinal study among 270 adult surgical patients 220 patients were

complaining postoperative pain (83%). The magnitude of pain varied by time after surgery with the highest level during the first 24 hr. [11, 14, 24]. According to the US Institute of Medicine, 80% of patients who undergo surgery report postoperative pain, with 88% of these patients reporting moderate, severe, or extreme pain levels²³.

The prevalence of postoperative pain was more than 80% among Asian patients [13]. In the first pilot study, conducted in Georgia among surgical patients in the four tertiary hospitals, post-operative pain prevalence was found to be high 88.5% ranging from 81.2 to 95.8, within 95.0% CI. The vast majority of the study subjects indicated the worst pain within 8-10 score by NRS, they experienced since the surgery [14].

Postoperative pain is a subjective phenomenon and may be affected by factors such as type of surgery, previous experience of surgery, duration of surgery, the length of the surgical incision, the type of anesthesia, the quality of post-operative care, individual characteristics and experiences, and fear anxiety; thus, the experience of pain may vary from person to person [10,18,23].

Tânia Cursino de Menezes Couceiro et al. found a significant association between the incidence of postoperative pain and the type of surgery ($p = 0.003$) (Figure 1.) [10]. High acute post-operative pain in general surgery was also reported by other authors [18].

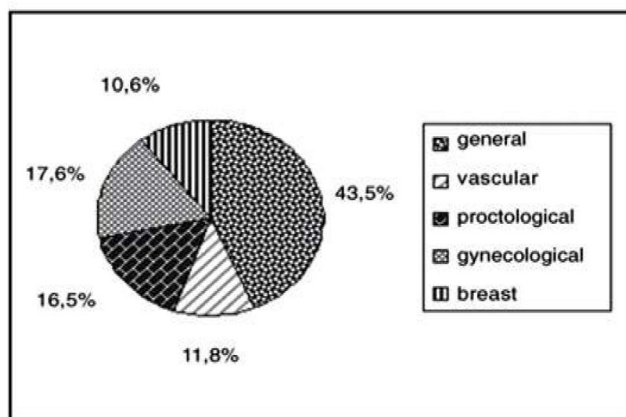


Figura 1 – Patients with Postoperative Pain. Distribution in type of surgery.

Controversial results were reported regarding the influence of some demographic factors on pain prevalence; according to Cham Ojulu Othow et al, a number of factors were strongly associated with the dependent variable: patient age, 18–45 years old [AOR = 2.8; (95%CI: 1.13, 6.74, $p = 0.026$)], skin incision length, 10 cm [AOR = 2.5; (95%CI: 1.30, 5.13, $p = 0.007$)], preoperative pain [AOR = 2.4, (95%CI: 1.02, 5.60, $p = 0.045$)], and surgeon experience [AOR = 2.1, (95%CI) [11], Yazýcý G. et al. found significant difference by these important demographic indicators, reporting that highest levels of pain were measured in the first 24 hours and the lowest and highest levels of pain felt in the first 24 hours were higher in female patients than in male patients with statistically significant difference [18]. In a large Brazilian study Tânia Cursino de Menezes Couceiro et al. pointed out that among male patients, 48.4% ($n = 30$) complained of pain, while 66.8% ($n = 55$) of the females did so, however prevalence of pain showed no differences regarding gender ($p = 0.536$) and age ($p = 0.465$) [10]. Similar results related to the significance of gender differences were shown by other authors [19,20,21]. Along with the age no statistically significant difference was found in terms of marital status, or educational status in ob-

served patients.

According to several studies, the bulk of patients experience from medium level to severe pain after operations [4,10,14-18,23,24].

Yazýcý G. et al. [18] found no statistically significant difference in the lowest (Table 1) and the highest level of pain felt by the patients in the first 24 hours in terms of the medications used in the postoperative period ($P > .05$) (Table 1, Table 2).

Table N1

Evaluation of the Least Pain Level in the First 24 Hours According to the Drugs Used in the Postoperative Period

Drugs Used in the Postoperative Period		n	Mean	Sd.	χ^2	P
Drug name	Opioid	111	3.63	3.13	2.059	.357
	NSAID	151	3.77	2.69		
	Paracetamol	635	3.99	2.96		
	Total	897	3.91	2.94		

Table N2

Evaluation of the Worst Pain Level in the First 24 Hours According to the Drugs Used in the Postoperative Period

Drugs Used in the Postoperative Period		n	Mean	Sd.	χ^2	P
Drugs	Opioid	111	6.86	9.85	3.340	.188
	NSAID	151	6.17	2.90		
	Paracetamol	635	6.34	3.02		
	Total	897	6.37	4.45		

Among pain relief therapies, intravenous infusions (74.1%) and oral medication (67.4%) were the most frequent [12].

It is well-acknowledged that the major cause of high prevalence of APOP is a poor management of pain. Postoperative pain is still under managed due to obstacles in implementation of Acute Pain Services due to insufficient education, fear of complications associated with available analgesic drugs, poor pain assessment and inadequate staff [22].

Postoperative pain is not adequately managed in greater than 80% of patients in the US, although rates vary depending on such factors as type of surgery performed, analgesic/anesthetic intervention used, and time elapsed after surgery [1,23]. Comparing own study results with other countries findings, Lovasi O. et al. concluded that pain management in Hungary lagged behind with significant room for improvement [12].

One of the most important components of pain management is regular pain assessment and documentation, which are frequently neglected. Orsolya Lovasi et al. [12] mentioned that in Hungary ward nurses measure postoperative pain (77.8%) by unidimensional scales. According to 59.7% of the respondents, pain is not measured and documented at rest. Written protocols are available in 34.4% of the departments.

Poorly controlled acute postoperative pain is associated with increased morbidity, functional and quality-of-life impairment, delayed recovery time, prolonged duration of opioid use, and higher health-care costs. In addition, the presence and intensity of acute pain during or after surgery is predictive of the development of chronic pain (1,4,2,3,12,24).

Conclusions: It has been reported that nearly three quarters of patients undergoing surgical interventions have acute pain, and that 20% to 80% of postoperative patients experience pain during the first 24 hours after undergoing operation. Reviewed literature showed high prevalence of acute

postoperative pain globally widely ranging across countries, patients' population, surgery type, methods of operation, scale of invasion, time after surgery and medications applied for pain relief. The vast majority of patients experience from medium level to severe pain after surgery. The highest level of pain felt by patients is observed in the first 24 hours after operation. The major cause of high prevalence of acute postoperative pain is poor management of pain. Growing body of evidences indicates inadequate level of acute postoperative pain management.

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SUMMARY

LITERATURE REVIEW

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It has been reported that nearly three quarters of patients undergoing surgical interventions have acute pain, and that 20% to 80% of postoperative patients experience pain during the first 24 hours after undergoing operation. Reviewed literature showed high prevalence of acute postoperative pain globally widely ranging across countries, patients' population, surgery type, methods of operation, scale of invasion, time elapsed after surgery and medications applied for analgesia. The vast majority of patients experience from medium level to severe pain. The highest level of pain felt by the postoperative patients is observed in the first 24 hours. The major cause of high prevalence of acute post-operative pain is poor pain management. Growing body of evidences indicates inadequate level of postoperative pain analgesia not rarely despite of acute pain management protocols being in place.

კლინიკური შემთხვევის აღწერა

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პირის ღრუს რბილი და კვლევანი ქსოვილების კონსტრუქციული თრომბოზული ნაკროზი და ჰემიპოლინეიროპათია - გარსენის სინდრომი

თსსუ, პირის ღრუს ქირურგიის და იმპლანტოლოგიის დეპარტამენტი¹, ყბა-სახის ქირურგიის დეპარტამენტი², სხაჩინაშვილის სახელობის საუნივერსიტეტო კლინიკა³

ახალი კორონავირუსული ინფექცია - COVID-19, SARS-CoV-2 ხასიათდება კლინიკური გამოვლინებების მრავალფეროვნებით, რაც გარკვეულწილად დამოკიდებულია ვირუსის შტამზე, მაკროორგანიზმის იმუნურ სისტემაზე, ფონური დაავადებების არსებობაზე.

COVID-19 კლინიკური მიმდინარეობის ცალკეულ შემთხვევებში შეიძლება თავი იჩინოს პერიფერიული ან ცენტრალური ნერვული სისტემის დაზიანების სიმპტომებმა, დაწყებული კრანიალური მონონეიროპათი-

იდან, გარსენის სინდრომით, გიენ-ბარეს მწვავე პოლინეიროპათიით, თავის და ზურგის ტვინის მწვავე ჰემორაგიულ-ნეკროზული ენცეფალოპათიითა და მიელოპათიით დამთავრებული. პათოგენეზის თვალსაზრისით, COVID-19 დასნებოვნებისას ნევროლოგიური დარღვევები გამოწვეული უნდა იყოს „ციტოკინური შტორმით“, ჰიპოქსემიით და ჰომეოსტაზის დარღვევით, რაც ხდება ენცეფალოპათიების გამომწვევი მიზეზი ან/და COVID-19 გარკვეული შტამების ნეიროტროპული და ნეიროვირულენტური მოქმედებით, რაც თავის ტვინის ცალკეული ნერვების ან ცენტრალური ნერვული სისტემის გარკვეული უბნების იზოლირებულ დაზიანებას იწვევს. ცალკეულ შემთხვევებში ადგილი აქვს ჩამოთვლილი ფაქტორების ერთდროულ ზემოქმედებასაც. COVID-19 გავლენას ახდენს ქრონიკული ფონური დაავადებების მიმდინარეობაზე, რაც დღის ნესრიგში აყენებს აღნიშნული პაციენტების მკურნალობის პროცესში მულტი-დისციპლინური მიდგომის აუცილებლობას.

გარსენის სინდრომი ხასიათდება თავის ტვინის ნერვების მრავლობითი ცალმხრივი დამბლით და თავის ჰემიპოლინეიროპათიის სინდრომის სახელითა ცნობილი. სინდრომი პირველად 1926 წელს აღწერილი იქნა ფრანგი ექიმის Garcin Raymond მიერ. აღნიშნული სინდრომი, ჩვეულებრივ, ვლინდება ქალას ფუძის ერთ რომელიმე მხარეზე ლოკალიზებული სხვადასხვა სახის პათოლოგიური პროცესების დროს, როგორცაა ქალას ფუძეზე იზოლირებულად განვითარებული, ანდა მიმდებარე რეგიონებიდან (სოლისებრი ძვალი, საფეთქლის ძვლის პირამიდა, ხახა, შუა ყური და სხვა) შეზრდილი სიმსივნეები, ტრავმები ქალას ფუძის ძვლების დაზიანებით; ბაზალური, ძირითადად სიფილისური გენეზის, მენინგიტები; კავერნული სინუსის თრომბოზი, ანევრიზმები, ანგიომები და სხვა. გარსენის სინდრომის სიმპტომატოლოგიაში საყურადღებოა: 1. ყნოსვისა და მხედველობის ცალმხრივი დარღვევა (I, II), 2. შესაბამის მხარეზე თვალის მამოძრავებელი კუნთების დამბლა ფტოზით, დიპლოპიით და შიგნითა სიელმით (III, IV, VI), 3. მგრძობელობის მოშლა სახის შესაბამის ნახევარზე და საღებო კუნთების ფუნქციის დარღვევა (V), 4. სმენის ცალმხრივი დაქვეითება და წონასწორობის რღვევა (VIII), 5. მიმიკური კუნთების ცალმხრივი დამბლა (VII), 6. ცალმხრივი დამბლა და მგრძობელობის მოშლა ენის უკანა მესამედის, ხახის, სასის და ხორხის არეში (IX, X), 7. მკერდ-ლავინ-დვრილისებრი და ტრაპეციული კუნთების ცალმხრივი დამბლა (XI), 8. ენის წინა ორი მესამედის დამბლა შესაბამის მხარეზე (XII). ამასთან, I და II ნერვების დაზიანება განიხილება, როგორც თავის ტვინის წინა ჯგუფის ნერვების სინდრომი, III, IV, V, VI, VII, VIII ნერვების დაზიანება - თავის ტვინის შუა ჯგუფის ნერვების სინდრომი, ხოლო IX, X, XI, XII ნერვების დაზიანება - თავის ტვინის უკანა ჯგუფის ნერვების სინდრომი.

კვლევის მიზანს შეადგენდა პირის ღრუს ქსოვილების ვრცელი პოსტკოვიდური ნეკროზისა და გარსენის სინდრომის სახით გამოვლენილი ჰემიპოლინეიროპათიის იშვიათი კლინიკური შემთხვევის აღწერა. აღნიშნულმა კლინიკურმა შემთხვევამ ყურადღება მიიქცია ორი ძირითადი მიზეზის გამო. პირველ რიგ-