EFFICIENT USE OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS FOR TREATMENT OF JOINT PAIN IN THE PRACTICE OF PHYSICIANS AND PHARMACISTS

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https://doi.org/10.35339/ic.11.4.mmr

ABSTRACT

Background. Due to the prevalence of dystrophic degenerative diseases, the annual increase in the number of visits from young and middle-aged patients leading an active lifestyle, and the growing frequency of traumatic injuries of various origins, the problem of joint pain is particularly relevant.

Aim. To investigate the main factors influencing the effective and safe use of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) in the treatment of joint pain syndrome.

Materials & Methods. Using the developed questionnaire, patients with articular pain syndrome were interviewed about the safety and rational use of NSAIDs.

Results & Conclusions. It was found that most often, people of working age with moderate intensity of pain syndrome sought medical care for joint pain. In one third of respondents, pain was accompanied by impaired motor activity in the joint. The largest proportion of respondents used oral systemic NSAIDs to reduce pain (46.7%), mainly non-selective cyclooxygenase inhibitors. A small proportion of patients (13.3%) who used NSAIDs topically preferred diclofenac, ibuprofen, and ketoprofen in the form of ointments and gels. 16.7% of respondents increased the dose of the drug on their own to achieve the desired therapeutic effect. 26.7% of patients simultaneously used several drugs from the NSAID group. However, the majority of the surveyed patients (63.3%) were not informed about the possibility of side effects associated with these drugs. A wide range of modern NSAIDs, a variety of dosage forms, high frequency and duration of use, and the potential risk of side effects require individual prescribing of drugs in this group. Prescribing timely and adequate treatment with a fast, effective and safe pain reliever remains an urgent issue in the daily practice of physicians and pharmacists.

Keywords: *dosage form, side effects, gastropathy, selectivity.*

Introduction

Arthralgia (joint pain) is a symptom that occurs in the joint area and can be the result of pathological processes in the joint itself, as well as in the structures surrounding it. Current data on the prevalence of chronic diseases indicate that the pathology of the musculoskeletal system has become one of the main causes of disability, especially among people aged 40–65 and over 65 [1]. Due to the prevalence of dystrophic degenerative diseases, the annual increase in the number of visits among people aged 40–65 and over 65 [1]. Due to the prevalence of dystrophic degenerative diseases, the annual increase in the number of visits from young and middle-aged patients leading an active life, and the growing frequency of traumatic injuries of various origins, the problem of joint pain is particularly relevant. According to statistics, NonSteroidal Anti-Inflammatory Drugs (NSAIDs) are the most commonly used medicines by healthcare professionals and the general public to treat joint pain and are the world's leading drugs in terms of consumption [2]. The use of NSAIDs leads to a decrease in pain, signs of local inflammation and fever. The responsible specialist should have a good command of the principles of rational prescription of NSAIDs for patients with joint pain syndrome to ensure effective pharmacotherapy and reasonable use of NSAIDs, select

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the most optimal drug with the best tolerability for a particular patient based on knowledge of clinical pharmacology.

The **aim** of a study was the identification and analysis of the main factors influencing the effective and safe use of NSAIDs in the treatment of joint pain syndrome.

Material & Methods

To achieve the aim of the study, 60 patients with articular pain syndrome were surveyed regarding the safety and rational use of NSAIDs, including sociodemographic, general clinical data and pharmacotherapeutic analysis. The pain syndrome was assessed using a Visual Analog Scale (VAS). In all patients, data on the pharmacotherapy received (type of NSAIDs, method of drug selection and features of use, duration of administration, clinical efficacy and side effects, use of additional drugs) were systematized. The study results were processed using a statistical Microsoft Excel software package. Continuous variables were expressed as mean ± standard deviations, as well as the percentage frequency of the phenomenon were calculated.

Results & Discussion

The average age of the surveyed patients with arthralgia was (49.47±2.60) years. According to the level of education, the surveyed patients were distributed as follows: 26.7 % with higher education, 10.0% with specialized secondary education, and 63.3% with secondary education. Overweight was diagnosed in 30.0% of respondents. The number of patients (57.0%) who reported doing enough daily physical activity was slightly higher than the number of those who were sedentary. The vast majority of respondents (70.0%) reported pain associated with changes in the knee joints, which, along with the hip joints, are among the supporting joints and carry a significant load. Restriction of motor activity in the joints was noted by 37.0% of the respondents. When analyzing the patients' condition according to the VAS scale, the severity of pain syndrome averaged (5.18±0.32) points, which corresponded to moderate pain.

It is known that the basis for a responsible approach to self-medication is the availability of complete information about the drug. When choosing a drug from the NSAIDs group, patients were equally guided by doctor's recommendations and advice from relatives and friends (43.3% each). For 13.3% of respondents, a pharmacist was the source of information about the medicines.

The largest proportion of respondents (46.7%) used tablet forms of medications to reduce joint pain (most respondents used non-selective CycloOXygenase (COX) inhibitors "traditional" NSAIDs: diclofenac, ibuprofen, paracetamol, naproxen, metamizole). 13.3 % of respondents preferred topical medications. The combined use of oral NSAIDs and topical agents was observed in 20.0% of cases, and the addition of a parenteral agent to this combination was observed in 13.3% of patients, respectively. Injectable forms of drugs in combination with topical medications were used to relieve arthralgia in 6.7% of patients. The analysis of the data showed that the vast majority of respondents (76.7%) reported significant efficacy from taking the prescribed NSAIDs. However, 23.3% of patients noted that the prescribed medication helped only partially. It should be noted that a small proportion of patients (16.7%) increased the dose of the drug on their own to achieve the desired therapeutic effect. The majority of respondents (73.3%) adhered to the prescribed treatment regimen. However, 26.7% of patients simultaneously used several drugs from the NSAID group, which is one of the risk factors for side effects from this group of drugs [3–5]. Combination drugs were preferred by 30.0% of respondents.

The most frequent and dangerous Adverse Events (AEs) with systemic use of NSAIDs include gastrointestinal complications, including symptoms of dyspepsia, erosion, and ulcers. Topical agents can cause redness at the site of application, itching, rashes, burning, and dry skin. However, most of the surveyed patients (63.3%) were not informed about the possibility of these side effects. According to the literature, patients with joint syndrome often have a significant number of comorbidities [6]. Concomitant hypertension, arrhythmia, peptic ulcer disease, and gastritis were detected in 63.3% of respondents. At a certain stage of the pain syndrome course, exacerbation of comorbidities can combine and complicate the management of patients with pain syndrome. Conversely, the presence of chronic pain syndrome may be an additional risk factor for premature death among older patients with comorbidities. It should be noted that patients with concomitant gastrointestinal disorders used NSAIDs while taking proton pump inhibitors on the recommendation of a physician or pharmacist. It is known that risk factors for NSAID gastropathy include concomitant use of glucocorticoids or anticoagulants/antiplatelet agents. Among the surveyed patients, 12 patients received clopidogrel and 7 patients received a glucocorticosteroid in combina-

tion with systemic and topical NSAIDs. The choice of NSAIDs for therapy must necessarily be made taking into account these factors, since concomitant use of glucocorticosteroids doubles the risk of gastrointestinal complications, and anticoagulants and antiplatelet agents increase the risk of bleeding [3; 7].

After analyzing the data obtained, it was found that most often people of working age seek medical care for joint pain, which emphasizes not only the medical but also the social importance of the problem of treatment, with moderate pain syndrome. The identified factors (one-third of patients are overweight, most patients do not follow a diet, and almost half of the surveyed individuals do not have sufficient daily physical activity) are associated with the onset of pain syndrome. The largest proportion of respondents used oral systemic NSAIDs to reduce pain, mostly non-selective COX inhibitors. According to international clinical guidelines, topical NSAIDs are currently recommended by the American Association of Orthopaedic Surgery (AAOS), National Institute for Clinical Excellence (NICE), International Society for Osteoarthritis Research (OARSI) as first-line therapy, in particular in the treatment of joint pain in osteoarthritis [8; 9]. In the updated ACR guidelines, the use of topical NSAIDs is indicated instead of oral medications, especially in patients over 75 years of age. According to the Cochrane analysis [1; 10; 11], diclofenac, ibuprofen and ketoprofen were found to be the most effective for the treatment of acute musculoskeletal pain among the 16 analyzed NSAIDs when applied transdermally. It should be noted that the small proportion of surveyed patients (13.3%) who used NSAIDs topically chose these medications in the form of ointments and gels. It was found that patients who were not satisfied with the analgesic effect achieved began to increase the dose or add other NSAIDs on their own, which only increases the risk of side effects but does not enhance the analgesic effect.

Conclusions

The wide range of modern NSAIDs, the variety of dosage forms, the high frequency and duration of use of these drugs, and the potential risk of side effects require individualized prescribing of drugs in this group. Given the above, prescribing timely and adequate treatment with a fast, effective and safe pain reliever remains an urgent issue in the daily practice of physicians and pharmacists.

DECLARATIONS:

Disclosure Statement

The authors have no potential conflicts of interest to disclosure, including specific financial interests, relationships, and/or affiliations relevant to the subject matter or materials included.

Statement of Ethics

The authors have no ethical conflicts to disclosure.

Data Transparency

The data can be requested from the authors.

Funding Sources

There are no external sources of funding.

Consent for publication

All authors give their consent to publication.

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Received: 31 Oct 2024
Accepted: 31 Dec 2024

Cite in Vancouver style as: Meretskyi VM, Meretska IV, Redko SV. Efficient use of non-steroidal anti-inflammatory drugs for treatment of joint pain in the practice of physicians and pharmacists. Inter Collegas. 2024;11(4):5-8. https://doi.org/10.35339/ic.11.4.mmr

Archived: https://doi.org/10.5281/zenodo.14756968