Review Article

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A comparison between dexketoprofen and other analgesics.

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ABSTRACT

qualities that are analgesic, anti-inflammatory, and antipyretic. Since dexketoprofen works better than ketoprofen, it is a commonly used preparation. The review's objective is to locate data regarding dexketoprofen and its comparison with other analgesics in current, original publications. November 2021 saw the completion of the systematic literature review (starting in 2018). Twelve publications were chosen from the databases of Medline Complete, Google Scholar, and PubMed. Many papers that have provided fresh insights into dexketoprofen have been released in the recent four years.The activity of dexketoprofen in comparison to other nonsteroidal anti-inflammatory medications and the combination of dexketoprofen and tramadol in comparison to paracetamol and tramadol are both compared in this article. The review's conclusions support the notion that dexketoprofen is a far more effective painkiller than paracetamol. Dexketoprofen has effects akin to those of dexmedetomidine and lidocaine. When treating acute pain, complex preparations including dexketoprofen and tramadol are a far more potent combination of painkillers than tramadol plus paracetamol therapy.

Keywords : Dexketoprofen, Pain, Tramadol,Nonsteroidal anti-inflammatory drugs, Chemical compounds studied in this article, Dexketoprofen (PubChem CID: 667550), Dexketoprofen trometamol (PubChem CID:177976), Ketoprofen (PubChem CID: 3825), Paracetamol (PubChem CID: 1983), Fentanyl (PubChem CID: 3345), Diclofenac sodium (PubChem CID: 5018304), Tramadol (PubChem CID: 33741), Metoclopramide (PubChem CID:4168), Lidocaine (PubChem CID: 3676), Dexmedetomidine (PubChem CID: 5311068)

INTRODUCTION

Dexketoprofen is a non-steroidal anti-inflammatory medication that possesses analgesic, anti-inflammatory, and antipyretic qualities [1]. The (S+) enantiomer of propionic acid is dexketoprofen. ketoprofen [1,2]. The primary mechanism of the drug's action is cyclooxygenase inhibition: constitutive (cyclooxygenase-1) is responsible for prostaglandin synthesis with physiological functions, and inducible (cyclooxygenase-2) is responsible for pro-inflammatory prostaglandin synthesis at the site of inflammation [1]. Ketoprofen's pharmacokinetics can be made simpler and its effective dosage can be lowered by 50% when only one isomer is used [3-5]. Dexketoprofen is well tolerated, effective at low doses, and does not cause major side effects [6].

30 minutes is the Tmax [1]. Dexketoprofen can be administered to a patient 15–20 minutes prior to a painful operation since it dissolves and absorbed fast from the gastrointestinal tract [5,9–11].

Of dexketoprofen, around 99% is linked to plasma proteins, primarily albumin. In the elimination phase, the half-life (T1/2) is 1.65 hours. Following Dextketoprofen is primarily eliminated by the kidneys after conjugation with glucuronic acid in the liver. Urine alone contains the S (+) enantiomer, indicating that dexketoprofen has not been converted to the R (-) enantiomer. The medication doesn't build up within the body. Concurrent food eating lowers the maximum concentration of the medication and lengthens the time it takes for the drug to reach its maximum concentration in the blood after administration.

Both prescription and over-the-counter forms of dexketoprofen are available in Poland; the former comes in the form of injection solution and comes in the form of 25 mg tablets and granules for oral solution. When it comes to the treatment of nociceptive, inflammatory, somatic, as well as abdominal agony. It is used to treat moderate to severe acute pain, such as postoperative pain, renal colic pain, and neuromuscular pain, as well as the symptoms of mild to moderate pain, such as muscle soreness, dysmenorrhea, and toothache [1, 2, 13–16].Researchers are searching for a novel, sustained-release version of dexketoprofen, which presents a significant obstacle for a medication with high solubility and quick excretion [17, 18]. Additionally, research is done to find novel uses for dexketoprofen in cancer and epilepsy.

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MATERIALS AND METHODS

The literature data was reviewed using current, standard criteria. A search was conducted on Google Scholar, PubMed, and Medline Complete for English-language papers. The directories were terms such as "dexketoprofen," "dexketoprofen and treatment," and "dexketoprofen and tramadol" were searched in November 2021. There were over 700 outcomes discovered. We scanned 168 articles that were published between November of 2018 and November of 2021. Twelve articles were selected for this systematic review after abstracts were skimmed (Fig. 1).

RESULTS AND DISCUSSION

A randomized controlled experiment was carried out by Al et al. [28] to evaluate the analgesic efficacy of fentanyl, paracetamol, and dexketoprofen in patients with renal colic. Before the medicine was administered, as well as 15, and 30 minutes after it was taken, the pain was measured. At fifteen minutes, Another prospective randomized, double-blind, controlled experiment that was finished and reported by Serinken et al. [29] examined the effects of paracetamol and dexketoprofen on patients with primary dysmenorrhea. The authors came to the conclusion that Despite higher Visual Analogue Scale scores following dexketoprofen administration, paracetamol was found to be beneficial in mitigating pain in patients with primary dysmenorrhea; nevertheless, the difference in pain scores between the two medications was not statistically significant [29]. There is no indication of any potential prejudice in the eligibility or exclusion criteria.

The medications' levels of effectiveness in each group were comparable. Dexketoprofen was more efficacious than fentanyl and paracetamol at 30 minutes. Authors came to the conclusion that dexketoprofen reduced pain more effectively than both paracetamol and fentanyl [28]. There was a possible bias, nevertheless, as the study did not include participants who were younger than 65 or whose Visual Analogue Scale score was less than 4 cm.

Another prospective randomized, double-blind, controlled experiment that was finished and reported by Serinken et al. [29] examined the effects of paracetamol and dexketoprofen on patients with primary dysmenorrhea. The authors came to the conclusion that Despite higher Visual Analogue Scale scores following dexketoprofen administration, paracetamol was found to be beneficial in mitigating pain in patients with primary dysmenorrhea; nevertheless, the difference in pain scores between the two medications was not statistically significant [29]. There is no indication of any potential prejudice in the eligibility or exclusion criteria.

Demirozogul et al. [31] conducted a prospective, randomized, double-blind, controlled clinical experiment to investigate the effectiveness of paracetamol and dexketoprofen in relieving musculoskeletal pain. Patients complained of pain in their hips, knees, back, neck, and shoulders. Before taking medication, the amount of discomfort was measured at 15, 30,and sixty minutes. When persons with different regions of pain were compared using the Numerical Rating Scale, dexketoprofen was statistically more effective than paracetamol. When comparing the Visual Analogue Scale pain scales of individuals experiencing various types of pain, it was found that within 30 and 60 minutes of the study's inception, dexketoprofen was more effective than paracetamol at relieving pain. When it came to neck pain relief, there was no statistically significant difference in the medications' efficacy.

Conversely, people over 60 years of age are the most likely to report osteoarthritis-related persistent pain. These people look for safe and efficient medication to treat their neck and joint discomfort. It is unfortunate that they were left out of the study team.Subjects with migraine disorders participated in the Yavuz et al. trial. [32] The safety and effectiveness of intravenous metoclopramide (group 1), metoclopramide in combination with dexketoprofen (group 2), and dexketoprofen (group 3) in the treatment of acute migraine attacks were evaluated in this randomized, single-center, double-blind, controlled experiment. The baseline, 15-, and 30-minute pain intervals were measured. Group 2 and group did not significantly differ in terms of pain alleviation. According to the study's findings, there was no discernible change in the three treatment groups' Visual Analogue Scale scores at 15 minutes, although at Specialists in ear, nose, and throat conditions also prescribe dexketoprofen to their patients. For the treatment of sore throat, Cimen et al. [33] conducted a randomized, prospective, controlled, double-blind research that compared intravenous dexketoprofen with paracetamol. Patients underwent assessments at 15, 30, 60, 90, 120, and 45 minutes after ingesting the medication. It was found that paracetamol and dexketoprofen did not have a superior effect on sore throats [33]. There is no indication of prejudice in the eligibility or exclusion criteria.

When metoclopramide and dexketoprofen were administered combined for 30 minutes, the results were better than when the two drugs were taken separately [32]. At the moment, metoclopramide is authorized for use as a medicine to boost the absorption of painkillers during acute migraine attacks. There is no indication of prejudice in the eligibility or exclusion criteria.

CONCLUSIONS

The review's conclusions support the notion that

dexketoprofen is a superior painkiller over paracetamol. Similar effects are seen with dexketoprofen, lidocaine, and dexmedetomidine. At the Dexketoprofen Tramadol at a 75 mg dosage in combination with a 25 mg dose works well to treat both acute and postoperative pain. For migraine sufferers, the combination of metoclopramide and dexketoprofen produced better outcomes than either medication alone.

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