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ANALGESIC PRESCRIBING PATTERN IN AN OUTPATIENT DEPARTMENT OF A TERTIARY HOSPITAL IN NORTH EAST NIGERIA

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ABSTRACT

Background: Pain is a frequently encountered clinical condition and one of the common reasons for seeking medical care. It has the potential to negatively affect physical activities and quality of life. Relief from pain is an overwhelming need of patients irrespective of cause. Analgesics produce relief from pain and the appropriate choice of drug is often a challenge for clinicians. Chronic use of analgesics is known to cause their own medical problems, so prescription should be on the basis of severity and needs of patients. **Aim:** The study aim to determine analgesic prescribing pattern and to identify evidence of irrational use. **Methods**: Prescription records containing analgesic were obtained from the pharmacy department of the hospital and relevant data extracted for analysis. **Results/Discussion**: Paracetamol, Ibuprofen and Diclofenac were the most prescribed analgesics accounting for over three quarters of analgesics. The combination of Paracetamol with Codeine is widely prescribed with innovator brands being the most preferred choice of prescribers. The result of this study is comparable with other similar studies and the major reason for prescribing these drugs is their comparative safety profile. The prescription of two or more analgesics observed in this study is irrational, so also is the use of NSAIDs without co-prescription of gastroprotective drugs. **Conclusion:** There is concern about the prescription of opiates the practice of combining analgesics has no clear therapeutic benefit for patients. The use of NSAIDs without gastroprotective agents is not in tandem with current best practice recommendation.

KEYWORDS: Analgesics, irrational use, Opiates, NSAIDs, Pain.

INTRODUCTION

Analgesics are the most frequently used form of treatment for pain in clinical settings. Evidence from clinical experience suggests that pain is among the most common reason for seeking medical attention. It is also one of the major reasons for emergency room admissions and a common problem among the elderly. It's also closely associated with trauma, cancer, surgery as well as neuromuscular and orthopaedic diseases.[1,2] Pain has the potential to affect emotions, thought process, sleep and physical activities as well as negatively impact on the quality of life.[3,4,5] Effective treatment of pain is regarded by patients as a requirement of achieving good health.[6] A number of alternatives for pain relief are available, but drugs are most commonly used particularly during accidents, emergencies and traumatic injuries.[7]

The major goal of treating pain is to achieve pain relief, however not all patients respond to pain medication in the same way. Analgesics that produce good pain relief for one patient at a certain dose may produce unbearable side effects for another at the same dosage and/or produce inadequate pain relief in yet another patient. In the absence of objective measurement of pain, patient self-report is the most used method of evaluating pain intensity and quality.[8] A number of pain assessment tools are available and they include numeric rating scale, verbal rating scale, Colour pain analogue scale, Mechanical visual analogue scale and Faces pain scale. These scales have limitations; however they represent an effort to objectively evaluate pain as a basis for treatment plan.[9]

The choice of analgesic is influenced by severity of pain and other clinical circumstances; recent evidence suggest that analgesic prescriptions is on the increase.[10,11,12,13] World Health Organization [WHO] treatment guideline recommend a step wise approach to pain treatment which is to start with Paracetamol or non-steroidal anti-inflammatory drugs and in the event of inadequate pain control step up to weak opioids [Codeine, Tramadol] and finally to strong opioids [Fentanyl, Morphine].[14,15]

Chronic analgesics use of some classes of analgesics is associated with problems; For instance NSAIDs are known to increase the risk of gastrointestinal bleeding, renal injury, peptic ulcer disease, congestive heart failure and myocardial infarct.[16,17,18,19,20] Irrational prescription

of analgesics is reported to be on the increase globally, particularly the opioids which has resulted in higher incidences of dependence, accidental overdose and medical emergencies.[21,22] Several studies reported that Paracetamol is the most prescribed analgesic largely because of its safety profile and tolerability[23,24,25], though other studies reported that opioids[26,27] and NSAIDs were the most prescribed.[11,228]

In Nigeria many public servants and their families now have increased access to national health insurance scheme [NHIS] in which patients pay only 10% service fee for drugs and other medical services while Health maintenance organizations pay the difference. While this may help in financial access to healthcare services, it does not guarantee quality. Analgesic prescriptions should follow the same principles of rational drug use, so evaluation of prescriptions is an attempt to provide information upon which rational use can be improved upon.

OBJECTIVES: To determine analgesic drugs prescription pattern and identify evidence of irrational use.

METHODS

Setting: The study was carried out in NHIS pharmacy department of University of Maiduguri teaching hospital, Maiduguri

Study design: This is a cross sectional retrospective study using validated outpatient prescriptions given to patients on health care insurance.

Data collection: Prescription records were obtained from [NHIS] pharmacy from the period January 2017 and May 2018. A total of 3,449 analgesic containing prescriptions were retrieved and used for analysis. Prescriptions that were incomplete, illegible, have no NHIS registration number and those not written on NHIS prescriptions forms were excluded. Information extracted from prescription forms included name, dosage, frequency of administration, brand, duration of therapy and demographic data.

Data analysis: The data was entered into SPSS 21 and analyzed using descriptive statistics. Prescriptions were also reviewed for prescription errors, dosage errors and potential for drug – drug interactions.

ETHICAL APPROVAL: This was obtained from the health research ethics committee of the University of Maiduguri teaching hospital, Maiduguri.

RESULTS

Distribution of patients on the basis of gender revealed that females accounted for more than half of patients that received analgesic prescriptions.

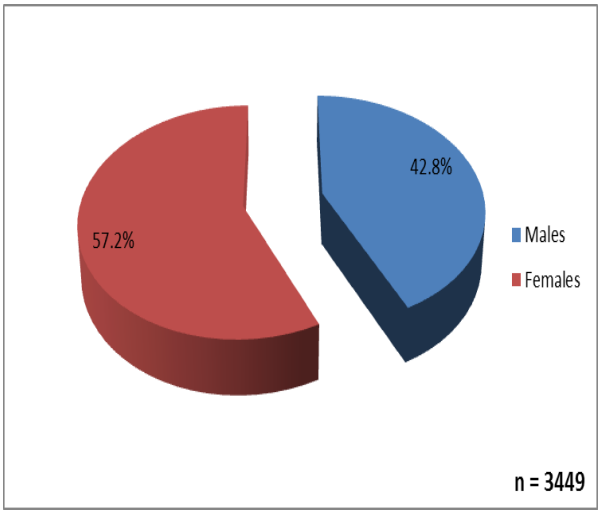

Figure 1: Gender distribution.

Patients who received most analgesics prescriptions were between the ages of 20 – 40 years representing over two thirds of all patients. The elderly and the young received less analgesics compared to other age groups.

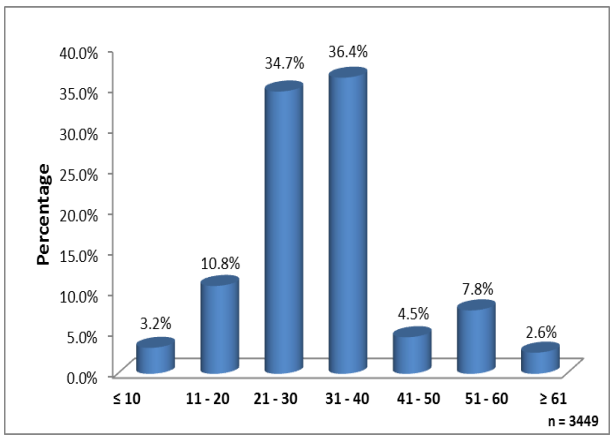

Figure 2: Age of patients.

Paracetamol **was** the most prescribed, followed by Ibuprofen [19.5%] and Diclofenac [16.2%]. Other analgesics constituted less than a fifth of all pain relievers.

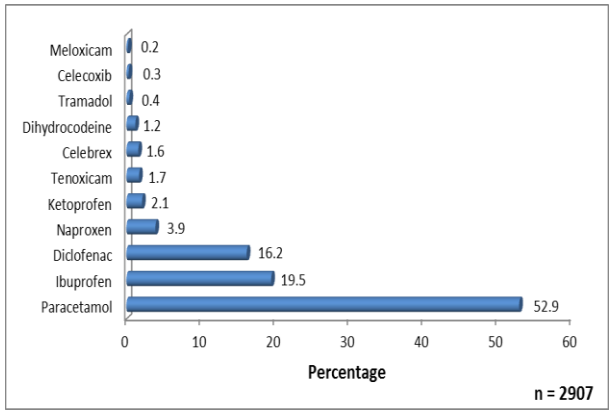

Figure 3: Analgesic prescription pattern.

The most prescribed analgesic combinations included Codeine with Paracetamol which was about three quarters of prescriptions, while NSAID with Paracetamol or Codeine are less than 5% in prevalence.

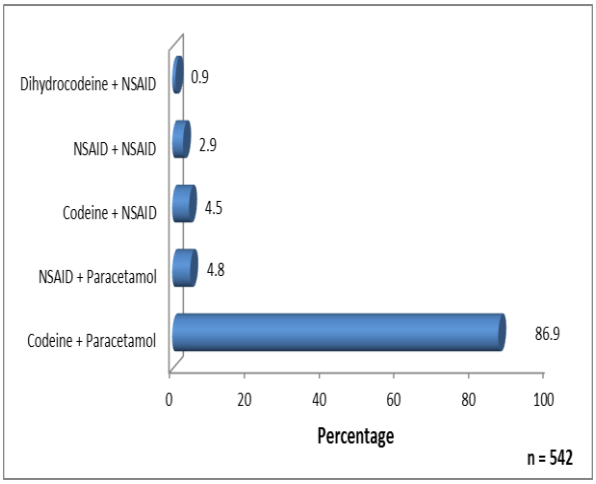

Figure 4: Dual therapies.

The prescription of innovator and generic version of analgesic drugs appears to slightly in favour of more expensive innovator brands.

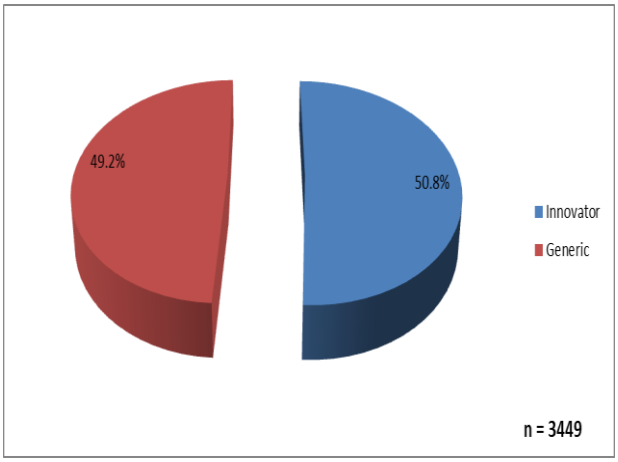

Figure 5: Innovator vs. Generic brand.

DISCUSSION

Pain control is a major goal of analgesic therapy and many patients receive either non-opioid or opioid drugs along with other prescribed drugs. The results of this study showed that Paracetamol, NSAIDs and opioids were the most prescribed analgesics. There were also combinations of these drugs representing a significant contribution to irrational analgesic prescriptions. Paracetamol accounted for more than half of all analgesic prescriptions similar to several previous studies.[10,12,29,30] This is largely because of its high safety profile and can be given to patients irrespective of their clinical status. Other similar studies however reported NSAIDs as the most prescribed analgesics contrary to results of this study.[28,31,32,33,34]

NSAID monotherapy accounted for more than two thirds of analgesic prescriptions with Ibuprofen being the most frequently prescribed, while Codeine was the most used among the opioids: this contrasts with other similar studies.[28,35] Ibuprofen is regarded as the safest in relation to risk of causing gastrointestinal bleeding, although it retains the risk like all other NSAIDS. It is however recommended that NSAIDs be prescribed along with gastroprotective drugs[36], no such practice was observed in this study. This has the potential of exposing patients on long term NSAID therapy to gastrointestinal side effects like ulceration, bleeding and in extreme cases complications.

The use of Codeine as the most prescribed opioid contrast with other studies.[10,27] The combination of Codeine and Paracetamol was highest in prevalence as dual therapies and it represents a source of irrational analgesic prescriptions. There is no conclusive evidence that combining NSAIDs, NSAID with Paracetamol or Opioids with Paracetamol produce superior analgesic effect.

There is evidence to conclude that high level of analgesic use is associated with renal damage[37,38,39] and in the case of NSAIDs increase the risk of gastrointestinal bleeding.[40,41] The high level of opioid containing analgesics has the potential for misuse, abuse, addiction, side effects and may also mask symptoms of underlying medical conditions.[42,43] One possible reason for high level opioid use in non-malignant pain may be related to poor prescribing habits, absence of objective assessment of pain severity and poor administrative control over the use opioids. While the use of opioids is necessary in orthopaedics, surgery, traumatic injuries and terminal illness[44], this is difficult to justify in this outpatient setting. Furthermore they pose significant risks to the elderly on long term.[45]

Pain associated with fevers and infectious diseases is a common complaint among patients and healthcare providers must resist the pressure not to use WHO recommended stepwise approach for analgesic prescriptions and conditions for opioid use. It is known that irrational analgesic prescriptions and intentional misuse carry significant costs to patients and the healthcare system. For instance high level of innovator brand prescription observed in this study can impose significant financial burden on patients and health insurers. The level of generic prescriptions in this study was low in contrast to previous studies.[30,46] It is important that cost reduction in the form of generic prescription, rational drug selection as well step wise analgesic drug selection should help improve rational prescription outcomes.

CONCLUSION

Irrational analgesic prescription is common particularly in situations that have no clear clinical benefits to patients. There is need to encourage physicians improve their prescription habits of analgesics as means of

optimizing pain relief with step wise approach to treatment of pain.

CONFLICT OF INTEREST: The authors declare no conflict of interest

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