Journal of Applied Pharmaceutical Science

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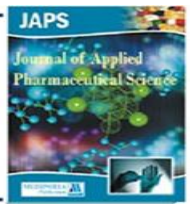

ISSN: 2231-3354
Received on: 11-05-2012
Revised on: 16-05-2012
Accepted on: 01-06-2012
DOI: 10.7324/JAPS.2012.2618

Evaluation of Analgesics Usage in Pain Management Among Physicians

Abu-Saeed Kamaldeen, Lawal Muhammed Omuya, Abu-Saeed Muhammad Buhari, Saka AO and Saka MJ

Abu-Saeed Kamaldeen
Research Unit, Peace Standard Pharmaceuticals, Ilorin. Nigeria.

Lawal Muhammed Omuya
Pharmacy Department Federal Medical Centre Lokoja. Nigeria.

Abu-Saeed Muhammad Buhari
Microbiology Department University of Ilorin Teaching Hospital, Ilorin. Nigeria.

Saka AO
Paediatric and Child health, University of Ilorin Teaching Hospital, Ilorin. Nigeria

Saka MJ
Epidemiology and Community Health, University of Ilorin Teaching Hospital, Ilorin. Nigeria

For Correspondence
Abu-Saeed Kamaldeen
Research Unit, Peace Standard Pharmaceuticals, Ilorin. Nigeria. Phone: +2348033898351, +2348059529632

ABSTRACT

One of the objectives of the National drug policy is to promote the rational use of drugs by prescribers, dispensers and consumer. However, in developing countries, inappropriate prescribing has been identified among health facilities. Analgesics have been identified as one of the commonly prescribed drugs among prescribers in managing pain. Therefore, the objective of this study is to assess the analgesic usage among physicians at the outpatient department of a tertiary health facility. This study was a descriptive cross sectional survey. A total of 624 prescription sheets containing prescribed analgesics was obtained and examined. Data generated were analysed using SPSS version 15 software. The mean number of analgesics per prescription was 1.23 ± 0.49. The mean number of drug per prescription was 3.68 ± 1.54. A total of 16 analgesics were prescribed and the most prescribed analgesic was Paracetamol. There were low irrational analgesics combinations among prescribers. Most of the analgesics were prescribed correctly. Majority of the analgesics were prescribed in generic names. Oral dosage form formed the bulk of the prescribed analgesics. Also, most of the analgesics were from the Essential Drug List and almost all analgesics prescribed were available in the Pharmacy department for dispensing to patients as at the time the prescriptions were written. This study revealed that pain management in the centre was largely in accordance to the National Drug Policy and Standard treatment guidelines.

Keywords: Analgesic, pain, prescription, physician.

INTRODUCTION

One of the objectives of the National drug policy is to promote the rational use of drugs by prescribers, dispensers and consumers. Among the strategies mapped out to achieve this objective is the development of Essential Drug List (EDL) and Standard Treatment Guidelines which are suppose to serve as a guide in diagnosing, management and treatment of medical conditions among health practitioners. However, in developing countries, inappropriate prescribing has been identified among health facilities among which include irrational use of drugs, high numbers of drugs per prescription and high use of drugs with unproven efficacy (Cheraghali *et al*, 2005; Erah *et al*, 2003; Isah *et al*, 1997 and Akande and Ologe, 2007).

A lot of clinical conditions are being diagnosed and managed in our hospitals day in, day out which if not properly handled will lead to increase morbidity and mortality. One the commonest symptoms associated with most of these medical conditions which also interferes with a person's quality of life and general functioning is pain.

There are various definitions of pain but the most widely acceptable one is as defined by the International Association for the study of pain which define pain as an unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage. Margo McCaffrey in 1968 gave the most appropriate definition for use in clinical practice as being whatever the experiencing person says it is, existing whenever he says it does. Pain is a subjective feeling which means that it cannot be quantitatively measured. The word pain covers a variety of sensation differing in quality, intensity and duration. Its sensation may be triggered by physical, mechanical, thermal, electrical or chemical agents. Certain cases may also result from pathological conditions. Pain could be acute in which case it is sharp and have quick onset of action; it could also be chronic lasting for a long time (Beers *et al*, 1999).

Pain management, therefore, is very essential in many clinical cases and is an interdisciplinary approach for easing the suffering and improving the quality of life of those living with pain. Pains are usually treated with drugs, usually analgesics and occasionally axiolytics.

Analgesics have been identified as one of the commonly prescribed drugs among physicians (Erah *et al*, 2003; Akande and Ologe, 2007; Zeruesenay *et al*, 2002). Analgesics are broadly classified into opiod and non- opiods. Opiod analgesics act on both central and peripheral nervous system while Non- opiod analgesics include the Non- Steroidal Anti-inflammatory Drugs (NSAIDs) and act by inhibiting synthesis of prostaglandins which are the molecules involved in the peripheral perception of pain (Beers *et al*, 1999). Apart from helping in alleviating pain symptoms, these analgesics have side effects which may be detrimental to the quality of life of patients. The most severe side effects include dependence and tolerance among the opiods and gastric ulceration among the NSAIDs (Beers *et al*, 1999). In Federal Medical Centre ,Lokoja; a tertiary health facility, analgesics have been found to be the most commonly prescribed class of medications which indicates that pain management is an important part of therapy (Ehijie and Ifeanyi, 2011). Therefore, research into analgesic usage in this facility is important. It is a form of medical audit about the prescribing pattern of this class of drug among physician and to assess their compliance with the National drug policy and the Standard Treatment Guidelines which promote efficacious and safety use of drugs in all health facilities as rational drug use is still a global problem regardless of considerable improvements in availability and control of drugs in hospitals (Bawazir, 1992). The objective of this study therefore, is to assess the analgesic usage among physicians at the outpatient department of this tertiary health facility.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted at Federal Medical Centre in Lokoja, Nigeria. The centre is a tertiary health care facility. The facility is a 199-bed hospital consisting of 14 wards. There are four types of outpatient departments in the hospital. This include the General outpatient department consisting of 3 consulting rooms and 3 doctors; NHIS outpatient department consisting of 1 consulting room and 4 doctors; Medical outpatient department consisting of 1 consulting room and 4 doctors and Surgical outpatient department consisting of 1 consulting room and 2doctors. The Pharmacy department consist of 12 registered pharmacists, 4 intern pharmacists and 2 pharmacy technicians as at the time of this study.

All prescription sheets containing prescribed analgesics issued to patients at the outpatient departments of the centre were gathered over a period of ten weeks and those containing no prescribed analgesics were excluded. A total number of 624 prescription sheets containing 784 prescribed analgesics were obtained and examined. Data collection form was designed and trained pharmacists at the pharmacy department recorded the required data and information. The information extracted from the prescription sheets included name of analgesics as written by the physician, generic name of prescribed analgesics, dosage form, frequency and duration of administration, number of analgesics prescribed per encounter and total number of drugs prescribed per encounter. Furthermore, the presence or absence of the prescribed analgesic on the Essential Drug List and the availability of the analgesic at the Pharmacy department were also noted.

Data generated from the questionnaire were analyzed using SPSS version 15 software after manual data verification and cleaning. Frequency distribution tables and chart were produced from the analysis.

RESULTS

This study was conducted at Federal Medical Centre, Lokoja; a tertiary health care facility and a major referral centre in Kogi State of Nigeria. A total number of 624 forms were filled containing 784 prescribed analgesics. All the prescription forms were from the Medical doctors of the centre and all prescriptions were written on proper prescription sheets. The mean number of analgesics per prescription was 1.23 ± 0.49. The modal number of analgesics encountered per prescription was 1 with a frequency of 479 (76.8%) while 130 (20.8%) prescriptions had two prescribed analgesics and only 15 (2.4%) of the prescriptions sheets had three analgesics per prescription. However, the mean number of drugs per prescription was 3.68 ± 1.54. The number of drugs ranged from 1 to 10 per prescription with the mode being 3 (182; 23.2%). A total of 16 different analgesics were prescribed throughout the period of study (Table 1). Close to half (46.6%) of the prescribed analgesics was Paracetamol. One hundred and twenty nine (16.5%) of the prescribed analgesics was Diclofenac and 95 (12.1%) was Ibuprofen.

Table 1: Distribution of the various analgesics prescribed.

Name of drugs	Frequency
Aceclofenac	5 (0.6%)
Aspirin	20 (2.6%)
Celecoxib	1 (0.1%)
Diclofenac	129 (16.5%)
Ibuprofen	95 (12.1%)
Ketoprofen	2 (0.3%)
Ketorolac	29 (3.7%)
Meloxicam	7 (0.9%)
Methyl salicylate	24 (3.1%)
Naproxen	2 (0.3%)
Paracetamol	365 (46.6%)
Pentazocin	34 (4.3%)
Pethidine	1 (0.1%)
Piroxicam	11 (1.4%)
Tramadol	59 (7.5%)
TOTAL	784 (100.0%)

Figure 1 show the patterns which the dosage forms of analgesics were combined in a single prescription in the centre. Analgesics were combined in ten different ways. Out of 145 prescriptions containing more than one analgesics, 50 (34.5%) of them contained two oral analgesics, 41 (28.3%) contained a combination of an oral and a parenteral analgesic, 23 (15.9%) contained a combination of an oral and a topical analgesic while 15 (10.3%) contained two parenteral analgesics.

Out of a total of 784, majority (749; 95.5%) of the analgesics were prescribed correctly in terms of strength, frequency and duration of use while only 35 (4.5%) had wrong dosage regimen, all of which were in term of strength or frequency of use.

Six hundred and sixty six (84.9%) of the analgesics prescribed were prescribed using their generic names while 118 (15.1%) were prescribed using brand names. Majority of Paracetamol and Diclofenac were prescribed in generic form (99.5% and 80.6% respectively) while majority (91.7%) of the methyl salicylate was prescribed using brand names (Table 2).

Oral dosage form formed the bulk of the prescribed analgesics with a frequency of 616 (78.6%). The total number for the parenteral and topical analgesics prescribed were 133 (17%) and 35 (4.5%) respectively. More than half (67.4%) of the prescribed Diclofenac were in oral form, 24% were parenteral while 8.5% were topical. For Paracetamol, 85.2% were prescribed in oral dosage forms while 14.8% were prescribed in parenteral forms (table 2).

As much as 673 (85.8%) of the analgesics prescribed were from the Essential Drug List while only 111 (14.2%) were found to be drugs not in the Essential Drug List.

Out of the 784 prescribed analgesics, 725 (92.5%) were available in the Pharmacy department for dispensing to patients as at the time the prescriptions were written while 59 (7.5%) were not available.

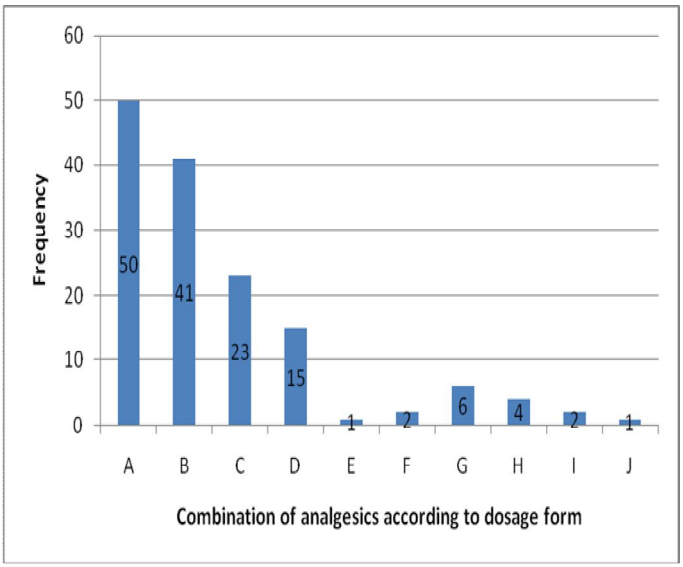

Fig. 1: Combination of analgesics according to dosage forms in prescriptions containing more than one analgesic.

Key:

A: Oral + Oral
B: Oral + Parenteral
C: Oral + Topical
D: Parenteral + Parenteral
E: Parenteral+ Topical
F: Oral + Oral + Oral
G: Oral + Oral + Topical
H: Oral + Parenteral + Topical
I: Oral + Parenteral + Parenteral
J: Parenteral + Parenteral + Parenteral

Table. 2: Distribution of the prescribed analgesics by generic names and dosage forms.

ANALGESICS	GENERIC NAME		DOSAGE FORM		
	Yes (%)	No (%)	Oral (%)	Parenteral (%)	Topical (%)
Aceclofenac	-	5 (100.0%)	5 (100.0%)	-	-
Aspirin	13 (65.0%)	7 (35.0%)	20 (100.0%)	-	-
Celecoxib	-	1 (100.0%)	1 (100.0%)	-	-
Diclofenac	104 (80.6%)	25 (19.4%)	85 (65.9%)	33 (25.6%)	11 (8.5%)
Ibuprofen	74 (77.9%)	21 (22.1%)	95 (100.0%)	-	-
Ketoprofen	-	2 (100.0%)	2 (100.0%)	-	-
Ketorolac	20 (69.0%)	9 (31.0%)	25 (86.2%)	4 (13.8%)	-
Meloxicam	7 (100.0%)	-	7 (100.0%)	-	-
Methyl salicylate	2 (8.3%)	22 (91.7%)	-	-	24 (100%)
Naproxen	2 (100.0%)	-	2 (100%)	-	-
Paracetamol	363 (99.5%)	2 (0.5%)	311 (85.2%)	54 (14.8%)	-
Pentazocin	34 (100.0%)	-	-	34 (100%)	-
Pethidine	1 (100.0%)	-	-	1 (100.0%)	-
Piroxicam	6 (54.5%)	5 (45.5%)	8 (72.7%)	3 (27.3%)	-
Tramadol	40 (67.8%)	19 (32.2%)	52 (88.1%)	7 (11.9%)	-
Total	666 (84.9%)	118 (15.1%)	613 (78.2%)	136 (17.3%)	35 (4.5%)

DISCUSSION

It was observed from this study that all prescription sheets were from doctors. This is expected in a tertiary health institution. The mean number of analgesic per prescription of 1.27± 0.51 with a modal value of 1 showed that the prescribers' practice of poly pharmacy in analgesic usage was very low. A similar trend was observed by research carried out in Ilorin where modal value of analgesic per prescription was also 1 (Akande and Ologe, 2007). The value of 3.68±1.54 obtained for drugs prescribed per encounter showed that most prescriptions containing analgesics had other classes of drugs prescribed along with it which increases the level of poly pharmacy across different classes of drugs. This value is also similar to those obtained in studies carried out in other cities in Nigeria like Warri, Lagos and Ilorin where values of 3.4, 3.5 and 3.99 respectively (Erah *et al*, 2003; Akande and Ologe, 2007; Odusanya, 2005). This value is much higher than that obtained in Ethopia where the highest value among the various hospitals was 2.2 (Zeruesenay *et al*, 2002).

Also, looking at the pattern of combination of analgesics in a single prescription, some irrational analgesic use were observed such as combining two or three parenteral analgesics, combining three oral analgesics or combining an oral analgesics with two parenterals at the same time. These combinations may unnecessarily predispose the patients to the side effects of the drug. Although this pattern of analgesic usage was low among the prescribers. It was also observed that all the combination of an oral and a parenteral analgesic had the parenteral as the starting dose and then oral analgesic as the maintenance dose. This combination may be as a result of bringing about prompt relieve from pain in cases were such pain may be severe.

Paracetamol was found to be the most commonly prescribed drug. This may be as a result of its low cost when compared to other analgesics prescribed yet showing adequate efficacy as analgesic and antipyrexia at the same time having minimal side effects. Similar observation was made in studies conducted in Ghana and Bangladesh where Paracetamol formed the largest percentage of analgesic prescribed in Hospitals (Owusu-Ansah, 2009; Rahman *et al*, 2007). In contrast however, researches carried out in India, Croatia and Sweden revealed that Diclofenac was the most prescribed drug which happens to be the second most prescribed drug according to this study (Hayas *et al*, 2011; Vlahovic-Palcevski *et al*, 2002). This study shows that the majority of analgesics prescribed were Non Steroidal Anti inflammatory Drugs. The levels of prescribing the opiods (Pentazocin, Pethidine and Tramadol) were low. This may be as a result of the fact that this class of drugs are reserved only for severe pain in order to minimize the issue of tolerance and addiction to them.

Based on the findings from this study, it showed that the prescribers were very conversant with the prescribed analgesics as almost all (95.5%) of the analgesic prescribed had correct dosage regimen in terms of strength, frequency and duration of use of the drugs. This gives an idea that the prescribers were adhering largely to Standard Treatment Guidelines as recommended by the government in order to promote rationale use of drugs.

The National Drug Policy advocates the use of generic instead of branded drugs. This study has shown that most of the prescription complied with this guideline as majority (84.9%) of the analgesics prescribed were in their generic names. Generic prescription has got special importance for rational use of drug as regards to cost, safety and efficacy by permitting the identification of the products by its scientific names (Ara and Chowdhury, 2001). Although similar observation was made in a study conducted in Ghana where 79.1% of analgesics prescribed were in generic names, Diclofenac was found to be the commonest analgesic prescribed in branded name which differs from findings in this study (Owusu-Ansah, 2009). Majority (80.6%) of Diclofenac in this study was prescribed in generic name. Result obtained from this study is also not in line with that from researches carried out in India and Cyprus where only 10.34% and 20% of analgesics prescribed were in generic names (Hayas *et al*, 2011). Almost all (91.7%) of methyl salicylate was prescribed in branded name. Methyl salicylate comes only in topical form and it was observed that all the prescribers prescribed only one brand of the methyl salicylate. The brand happens to be the commonest and the most readily available around the area.

It was also encouraging to discover that majority (85.8%) of the analgesics were prescribed from the Essential Drug List. This again goes to show that the prescribers in this centre to a large extent complies with guidelines in the National Drug Policy aimed at stopping irrational drug prescribing among prescribers. Similar finding was gathered from a similar research where 94.3% of the analgesics prescribed were from the approved drug list (Owusu-Ansah, 2009).

The availability of almost all (92.5%) of the prescribed analgesics in the Pharmacy department was also good because this goes to show that effective strategy for ensuring uninterrupted drug supply in the centre was in place. This ensures that the patient gets the right drug at the right time and thus, helps in reducing morbidity and mortality that may result from scarcity of the required medications.

CONCLUSION

This study has revealed that to a large extent, pain management in the centre is in accordance to the National Drug Policy and Standard Treatment Guidelines. The mean value obtained for number of analgesic per prescription was very low. Majority of the analgesics prescribed were prescribed correctly as regards the strength, frequency and duration of use; most of the analgesics were written in generic names with a very large percentage being oral medications. Also, majority of the analgesics were prescribed from the Essential Drug List.

On the other hand, some of the prescriptions revealed irrational combination of analgesics. Although this practice was low among the prescribers, it is an area that must be looked into which will aid in promoting rational drug use at all times.

Therefore, trainings and workshops should be organized from time to time to enlighten the prescribers on the current trend in analgesic combination and use. Similar studies should also be

carried out in other health care facilities in order to help the stakeholders to identify possible problems with a view of finding lasting solutions which will enhance rational drug use.

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