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Research Article

OLIGOANALGESIA IN EMERGENCY DEPARTMENT: ECONOMICAL USE OF ANALGESIA A CAUSE FOR CONCERN

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ABSTRACT

Pain remains the most common complaint of patients presenting to the emergency department. This main reason for patient visitation to emergency department is often forgotten once the primary diagnosis is made**.** This prospective study recruited adult patients (age >18 year) who had pain as part of their initial complaint at presentation to the emergency department. Relevant data were extracted from patients' case notes and patients directly. A total of 257 patients, 22 nursing staff and 15 medical staffs were recruited into the study. Our patients' age ranges from 18 to 86 year old with mean age of 46.95 year old (± 20.59. The pain score at presentation ranges from 4 to 9 with mean pain score of 6.2000(±1.6987), while pain score between 48 and 72 hours post admission ranges from 2 to 8 with mean pain score of 4.9333 (±2.1536 (mean difference = 1.2667, p <0.001). Few patients received adequate dose of analgesia within the first 48 hours of admission. One hundred and sixty eight (72.103%) of our patients have pain score greater than 3 between 48 and 72 hours post admission with mean pain score of 5.75(±1.595). Eleven patients (84.61%) with acute abdomen suffered oligoanalgesia while 26 patients with cancer (83.81%) suffered oligoanalgesia over the study period. Opiphobia (78.3%) followed by over sedation (72.9%) were major reasons for withholding analgesia. In none of the case notes was patient pain rated or scored throughout the period of study. Oligoanalgesia remains a major problem in our emergency department. Major factors associated with poor pain control include; lack of pain assessment and opiphobia resulting from poor knowledge about analgesia.

INTRODUCTION

Pain remains the most common complaint of patients presenting to the emergency department (ED) [Ducharme J 1994, Burt CW and McCaig LF 2001]**,** with no bias for age, sex, race or creed*. This is not new to the emergency workers.* The surprising thing is that, this reason for patients' visitation to ED is often forgotten once the primary diagnosis is made, making analgesia and pain control an afterthought [David EF *et al* 2005]**.** It is often believed that pain cannot kill and we thus pay less attention to it, however, one of the most important role of health care worker is to alleviate pain and relieve suffering, yet most of these patients still experienced unsatisfactory pain control in ED [Cordell WH *et al* 2002, Richard HA *et al* 2002, Ducharme J and Barber C 1995]**.** Oligoanalgesia a term coined in 1989 by Wilson and Pendleton to describe a phenomenon of under treatment and poor pain control in emergency department [Wilson JE and Pedlenton JM 1989]**,** following a retrospective review of chart of 198 patients with different painful conditions. Despite recent knowledge and advances in pain management, oligoanalgesia still remains a cause for concern in the emergency setting. Apart from humanitarian point of view as Albert Schweitzer once said "we must all die. But that I can save a person from days of torture, which is what I feel is my great and ever privilege. Pain is a more terrible lord of mankind than even death itself." Poor pain control is associated with exacerbation of underlying pathophysiology, injuries [Sinatra RS 1992, Bonica JJ 1985] derangement of physiological functions [Paul M. Paris and Ron Stewart 2002], psychological disturbances and this prevents patients from giving useful information as well as prevents patients' cooperation. Oligoanalgesia results from lack of analgesia, inadequate dosing and so on. The aim of this study is to determine the prevalence of oligoanalgesia between the forty

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eight and 72 hours after admission into our emergency department and factors responsible for oligoanalgesia.

METHODS

This prospective study was carried out in the Emergency Department of Ladoke Akintola University of Technology Teaching Hospital (LTH) Ogbomoso, *between July 2013 and July 2014, between the hours of 8.00am and 8.00 pm* when the investigators were around. LTH Ogbomoso is a tertiary health care centre with facilities for primary, secondary and tertiary healthcare delivery. The study recruited 257 adult patients (age >18 year) who had pain as part of their initial complaint at presentation to the emergency department and fulfilled the inclusion criteria (non pregnant, conscious adult, pain score of greater than 3 on visual analog scale (VAS) score of 0 to 10 at presentation, non intoxicated patients and consented patients). Also included in the study were 22 nursing staffs, 15 doctors from different specialties rotating through emergency department. Data collected from the patients by the investigators included sociodemographic characteristics of the patients, primary compliant of the patients at presentation and patients' estimate of pain score at presentation. While patients' satisfaction about their pain control on a visual analog scale score of 0 to 100, gross satisfaction with pain control with two possible option of yes or no, pain score between 48 and 72 hours post admission. The patients' case notes were retrieved and analysed while patients were still in emergency department between 48 and 72 hours after admission. Data collected from the patients' case notes included; documentation of patients' pain score at admission or at first review by emergency staffs, progressive assessment of patient pain score during routine rounds, whether analgesia was prescribe or not, type of analgesia prescribed, time lag from admission to administration of first analgesia and compliance to prescribed analgesia. Oligoanalgesia defined as pain score on visual analog scale of greater than 3 at any point in time between 48 and 72 hours post admission.

A preformed paper proforma was also administered to emergency health care workers within the study period, to highlight possible reason(s) and factor(s) responsible for oligoanalgesia in the emergency department. Data obtained were subjected to statistical analysis using a software package (SPSS for window release 16.0; SPSS, Chicago, IL) while results were presented in form of tables and figures. Chi square, t- test and one way analysis of variance (ANOVA) were used for test of significance. All p value below 0.05 are considered to be statistical significant. While test of correlation was done using Pearson product moment of correlation (r) with weak correlation defined as $r < 0.5$ and strong correlation as $r > 7$.

RESULTS

This prospective study recruited a total of 257 patients, while 233 patients met the inclusion criteria and were analysed for the study. Twenty two nursing staffs and 15 medical staffs were also included into the study. Our patients' age ranges from 18 to 86 year old with mean age of 46.95 year old (± 20.59) with male to female ratio of 1.53:1. The sociodemographic characteristics of recruited patients are has shown in table1.

Table 1 Patients' sociodemographic characteristics

Patients Characteristics	NO	%	Mean pain score at admission	Mean pain score between 48 and 72 hrs post admission	P value
Sex					
Male	141		5.93	4.52	0.0923
female	92		6.61	5.56	0.0990
Diagnosis					
Acute abdomen	13		6.71	5.22	0.1547
Trauma	110		6.62	5.40	<0.001
Cancer	31		7.62	7.41	0.0934
Others	79		3.54	3.27	<0.001

The pain score at presentation ranges from 4 to 9 with mean pain score of 6.2000(±1.6987), while pain score between 48 and 72 hours post admission into emergency department ranges from 2 to 8 with mean pain score of 4.9333 (±2.1536) giving mean pain score difference of 1.2667 which is statistically significant ($p < 0.001$). Few patients received adequate dose of analgesic as prescribed within the first 48 hours of admission into to the emergency department (Fig1).

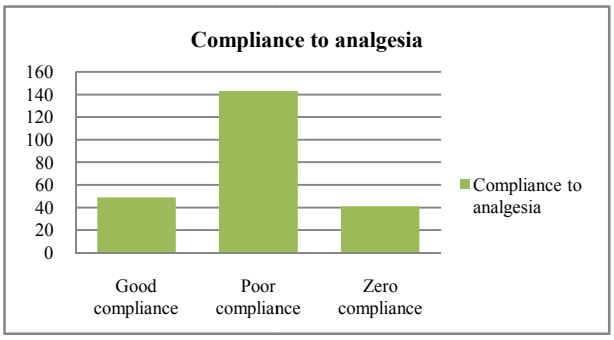

Figure 1 Showing the compliance to analgesic prescription in the first 48 hours of admission.

Only 9 (3.86%) of our patients received one or other form of analgesia within the first half hour of admission into emergency department. This rose to 37 (15.87%), 66 (34.4%) and 192 (82.40%) at 2, 6 and 48 hours post admission respectively (fig 2).

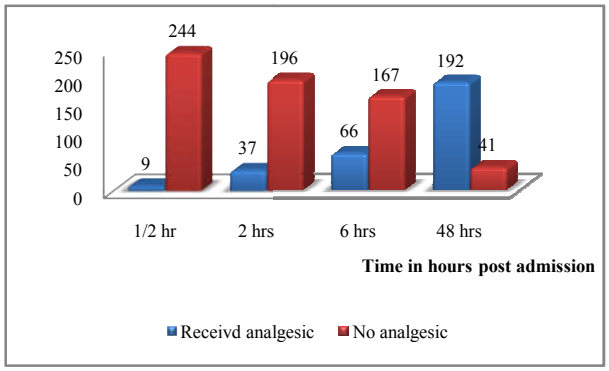

Figure 2 showing frequency of patients at door-to-analgesia time

One hundred and sixty eight (72.103%) of our patients have pain score greater than 3 between 48 and 72 hours post admission with mean pain score of 5.75(±1.595), the rest 65 (27.89%) patients' pain score was less or equal to 3 with mean pain score of 2.8 (± 0.548). This shows a statistical significant difference between true incidence of oligoanalgesia from patients' assessment and perception of emergency staffs towards pain control $p < 0.001$ (fig 3).

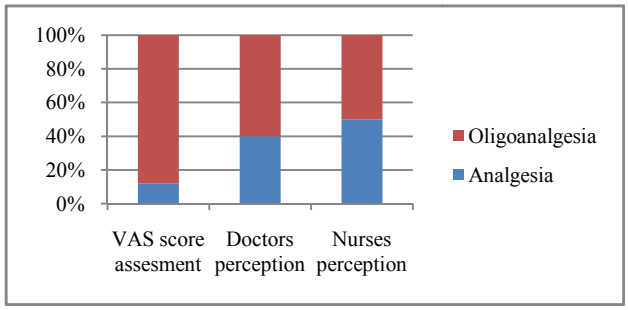

Figure 3 Comparing true incidence of oligoanalgesia compared to doctors' and nurses' perception

One hundred and fifty nine (68.24%) of our patients were grossly satisfied with their overall level of pain control compared to 65 (27.89%) patients who were considered to be pain free (VAS score <3) (p= 0.5603).

Between 48 and 72 hours post admission to ED the pain score ranges from 2 to 8 with mean pain score of 4.9333 (±2.1536) while the patients' satisfaction with their level of pain control ranges from 2 to 10 with mean satisfaction score of 7.256 (±2.012) this shows a poor correlation between mean pain score and patients' satisfaction between 48 and 72 hours post admission to ED (r= 0.1569, r^2= 0.0246).

Eleven patients (84.61%) out of 13 patients with acute abdomen suffered oligoanalgesia while 26 patients (83.81%) out of 31 patients with cancer suffered oligoanalgesia over the same study period. figure 4.

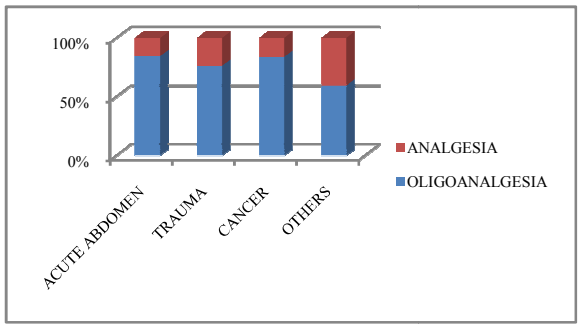

Figure 4 Relative incidence of oligoanalgesia in different clinical conditions between 48 and 72 hours post admission.

The mean duration of practice of medical staffs was 4.2 years while that of nursing staff was 9.5 years.

Table 2 Reasons for oligoanalgesia from health workers perspectives

Reasons for oligoanalgesia	Medical staffs No.^{P}/No.^{t} (%)	Nursing staffs No.^{P}/No.^{t} (%)	Total No.^{P}/No.^{t} (%)
To avoid over sedation	9 /14 (64.28)	15/20 (75.00)	24/34 (70.58)
Patient failed to provide the drugs	9/15 (60)	14/21 (66.66)	23/36 (63.88)
Patient did not complain of pain	3/12 (25)	6/18 (33.33)	9/30 (30)
Patient refused	0/13 0	1/5 (20)	1/18 (5.55)
Low nurse to patient ratio	4/13 (30.76)	13/22 (59.09)	17/35 (48.57)
Fear of addiction to opiod	9/15 (60)	20/22 (90.90)	29/37(78.37)
Most time patients unduly exaggerate there pain	4/12 (33.33)	8/17 (47.05)	12/29 (41.37)
Drug out of stock	3/8 (37.5)	13/21 (61.90)	16/29 (55.17)
Some conditions do not required analgesia	5/11 (45.45)	7/19 (36.84)	12/30 (40)
Concern about masking symptoms	11/15 (73.33)	1/4 (25)	12/19 (63.15)

No.^{P} Number of positive response
No.^{t} Total number of respondent

Nineteen (51.36%) and 18 (48.68%) of our emergency staffs believed that our patient experienced oligoanalgesia and analgesia respectively (fig 2 above). Opiphobia (78.3%) followed by over sedation (72.9%) top the main reasons responsible for oligoanalgesia among health workers (table 2)

In none of the case notes was patient pain rated or scored by the health care workers throughout the period of study. However, evidence of gross assessment of pain during routine ward round was documented in 219 (93.99%) of the case notes.

DISCUSSION

Pain is the commonest complaint of patients visiting emergency department of hospitals [Ducharme J 1994], yet it's still undertreated [David EF *et al* 2005, Cordell WH *et al* 2002, Richard HA *et al* 2004, Isabelle D 2007]. A similar observation in our study with about 72% of our patient suffered oligoanalgesia between 48 and72 hrs post admissions into ED. This is in total contrast to Hippocratic Oath and patients' expectation of rapid pain control in ED, an expectation not met in many ED[Isabelle D 2007] (ours inclusive), despite the availability of many evidenced based management guidelines [Fosnocht LL 2005, American Pain Society Quality of Care Committee 1995, Ducharme J 2000].

There was a significant poor "door- to - analgesia" interval as 96% and 84% of our patients did not receive any form of analgesia in the first 30 minutes and 2 hrs respectively following admission into the ED, similar finding from a study [Isabelle D *et al* 2007]. This study found that about 18% of our patients received no form of analgesia while 61.37% received inadequate analgesia by the end of first 48 hrs of admission into the ED a similar report from one study demonstrating inadequate treatment of pain in emergency department [Wilson JE and Pedlenton JM 1989, Selbst SM and Clark M 1999, Reichl M and Bodiwala GC 1987, Lewis LM *et al* 1994], the phenomenon of oligoanalgesia is not a specific problem to our setting a similar report was also noted in treatment of acute orthopaedic pain in a Costa Rica study [Jantos TJ *et al* 1996].

There was a statistical significant difference between objective documented incidence of oligoanalgesia in patients and reported incidence of oligoanalgesia from health care workers' perspective in our study. Various factors have been identified as responsible for this difference such as; lack of objective assessment, poor documentation of pain, [Isabelle D *et al* 2007, Nelson BP *et al* 2004, Thomas SH and Andruszkiewcz LM 2004, Silka PA *et al* 2004] health care workers assumption that patients do exaggerate their pain [Olakulehin *et al* 2016] poor research and lack of practice guidelines [Bonica JF 1987] this was the case in our study as no single objective documented evidence of pain score by the health care workers using any form of pain rating scale such as, numerical rating on visual analog scale score for assessment of pain severity, throughout patients stay in ED unit. This coupled with lack of practical guidelines in our centre preclude proper pain management as failure of pain assessment preclude need to adjust analgesia and evaluation of treatment adequacy. This further confirmed previous report in keeping with oligo-evidence for oligoanalgesia among health workers [Green SM 2012]. A previous study has shown that education of emergency department staff and documentation of pain intensity using a

validated scale has improved the assessment of pain and analgesia practices of ED staff. [Thomas SH and Andruszkiewcz LM 2004, Harmer M, Davies KA 1998].

Our results further support the phenomenon of opiphobia as one of the main reason given for oligoanalgesia by health care worker [Weinstein SM 2000], another finding of our study. This opiphobic phenomenon results from assumption by the emergency physicians' belief that request of analgesia and complain of pain from patients with poor response to analgesia, are manifestation of "drug- seeking" behaviour this result in analgesia withdrawal with pseudo-addictive phenomenon in patients. [Miner JR 2003].

This study further found out that cancer patients were more relatively prone to oligoanalgesia followed by the patients with acute abdominal condition, a reflection of possible fear of masking abdominal sign that may preclude diagnosis and ongoing assessment of patients, as this study showed a similar startling result as about 73% of our doctors shear a similar belief as major reason for withholding analgesia in patients. This erroneous belief of withholding analgesia in patient with acute abdomen until diagnosis is made originated in the early part of last century [Hughes TJ 1979] and was further popularised by Copes in 1921 in is great book, Early Diagnosis of the Acute Abdomen [Silen W 1996] and has also been reported from another study [Paul M. Paris and Ron Stewart, 2002]

Our study further highlights significant disparity between patients' satisfaction with pain control and overall level of pain as about 68% of patients were satisfied with their overall level of pain control compared to about 27% of patients who were considered to be pain free (VAS score <3) this was further demonstrated as mean pain score and patients satisfaction score shows no significant correlation in our study a similar occurrence as been noted in one study on post operative pain where patients pain satisfaction did not correlate with intensity of post operative pain, a possible explanation for this is that, patients' expectation of pain reflect patients' view of their pain, as an inevitable component of their conditions this results in patients' low expectation of pain relief in post operative setting with higher level of patients' satisfaction with their pain control [Kuhn S *et al* 1990]. This may be explained further by the role of other pain modifiable factors such as emotion and psychosocial state of the patients [Steven JL and William SS 2011] and patients' expectation [Main CJ 2010].

CONCLUSION

Oligoanalgesia remains a major problem in our emergency department. Major factors associated with poor pain control include; lack of documentation and assessment of pain, opiphobia resulting from poor knowledge about analgesia. To improve our analgesia practice in emergency department, pain must be taken as true emergency that requires urgent attention such as one given to patient with myocardial infarction.

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