

Prevalence & Pattern of Opioid Analgesic's Prescription among Doctors of a Tertiary Care Hospital: Are We Moving Towards an Opioid Epidemic?

Muhammad Farooq¹, Sadiq Hussain², Tufail Hussain³, Sajid Razzaq³, Sultan Shah³ and Muhammad Nadeem⁴

ABSTRACT

Objective: To identify its possibility in order to warn all concerned to prevent such epidemic. Opioid epidemic has already occurred in many countries including United States of America due to similar reasons in recent years where state of emergency has been declared in October 26, 2017 to achieve opioid stewardship.

Study Design: Observational study.

Place and Duration of Study: This study was conducted at the Sheikh Khalifa Bin Zayad Alnayan Hospital (CMH) Rawalakot from October 2018 to March 2019.

Materials and Methods: Prevalence and pattern of opioid analgesic use was assessed in 72 practicing doctors (42 consultants and 30 general physicians) working in a tertiary care SKBZ hospital (CMH) Rawalakot through a performa.

Results: Almost all doctors (98.61%) stated that they prescribe opioids. Only one pediatrician stated that he did not use opioid analgesics. Most of doctors (87.50%) prescribed both injections and oral tablets. However some doctors particularly Anesthetists prescribed only injections (2.77%, nelbuphine & morphine) while few general physicians (9.72%) prescribed only oral tablets of opioid analgesics. Majority (41; 56.94%) of doctors did not counsel their patients about options, risk factors and side effects of opioid analgesics.

Conclusion: Opioid analgesics were prescribed by almost all doctors often without following proper guidelines and counseling. This trend can result in impending opioid epidemic of overuse, misuse & addiction. There is a need of physician's awareness & implementation of updated guidelines to promote reduction and judicious prescription of opioid analgesics.

Key Words: acute pain, post-operative pain, Chronic pain, narcotic analgesics, opioids, non-narcotic analgesics, non-pharmacological measures for pain control.

Citation of articles: Farooq M, Hussain S, Hussain T, Razzaq S, Shah S, Nadeem M. Prevalence & Pattern of Opioid Analgesic's Prescription among Doctors of a Tertiary Care Hospital: Are We Moving Towards an Opioid Epidemic? Med Forum 2019;30(9):78-81.

INTRODUCTION

Management of pain is one of the greatest challenges for physicians. Alleviation of pain depends on the specific type of pain; nociceptive or neuropathic Pain.¹ Effective pain relief is important because it can result in psychological disturbances, disturbed sleep, anorexia, irritability, anger and depression.² Opioids produce analgesia through actions at mu, kappa & delta

¹. Department of ENT / Pediatrics² / General Surgery³ / Medicine⁴, Poonch Medical College, Rawalakot

Correspondence: Dr. Muhammad Farooq, Associate Professor ENT, Poonch Medical College, Rawalakot AJK.
Contact No: 0335-0054849
Email: dr.farooqak@gmail.com

Received: May, 2019

Accepted: June, 2019

Printed: September, 2019

receptors at central nervous system that also respond to endogenous opioid like peptides.³ Opioids are good 2nd line analgesics for moderate to severe pain however these are not safe and can have serious side effects particularly addiction.^{4,5} Well established side effects of opioid analgesics are respiratory depression, drowsiness, sedation, confusion, nausea, vomiting, constipation, depression and risk of tolerance, physical dependence & addiction.⁶ Moreover opioids may worsen postoperative recovery and are associated with delayed wound healing, decreased immunity, increased risk of wound infection, increased morbidity, prolonged hospital stay and higher readmission rates.⁷⁻¹⁰ There is a potential risk of opioid abuse from short term opioid used for acute postoperative pain.¹¹ Estimates suggest that about 3-10% of these patients will continue to take opioids one year after surgery.¹² The euphoric effect of opioids can lead to over-dosage and misuse.¹³ Longterm use of opioid analgesics can lead to endocrinopathy mostly manifested as 'opioid associated androgen deficiency (OPIAD). This syndrome is

characterized by low levels of sex hormones particularly testosterone resulting in reduced libido, erectile dysfunction, fatigue, hot flashes and depression.¹⁴ The world is facing opioid epidemic due to increase in opioid prescriptions in response to the policy of eliminating all pain from 1991 onwards. This trend has resulted in increase in morbidity & mortality due to opioid side effects, over use, & misuse.^{15,16} It compelled many countries including USA to take measures for reduction of opioid prescriptions. On October 26, 2017, President of USA has declared opioid epidemic as public health crisis.¹³ Opioid analgesics are used in 49% cases by pain medicine specialists & in 37% cases by 3 surgeons.¹⁷ Surgeons often under appreciate the risk of developing chronic opioid use after short term use of opioids.¹⁸ Upto 10% patients who were prescribed opioids postoperatively for acute pain will continue to take it for 1 year.¹⁹

As compared to non-opioid analgesics, the benefits of opioid analgesics for pain relief and restoration of body functions are almost similar but the side effects of opioids are much more than non-opioid analgesics.¹¹

Patients should be screened to identify high risk patients, having history of substance use disorder, especially opioids, psychiatric illness, concurrent use of benzodiazepines, extremes of age, pregnancy, significant pulmonary disease, or sleep disordered breathing.²⁰ Non-pharmacological methods, when used in appropriate manner, are effective in pathologies like inflammation, edema, muscle spasm, progressive tissue damage, psychological abnormalities and function loss due to pain. These methods are cognitive-behavioral therapy, physiotherapy, psychotherapy, hot-cold treatments, relaxation-exercise, positioning, movement restriction-resting, distraction, acupuncture, hydrotherapy, transcutaneous electrical nerve stimulation (TENS) and massage.²¹

MATERIALS AND METHODS

This study was performed from October 2018 to March 2019, in Sheikh Khalifa Bin Zayad Alnayan Hospital (CMH) Rawalakot which is a tertiary care teaching hospital affiliated with Poonch Medical College. Approval from hospital medical ethical committee was also taken. Prevalence and pattern of opioid prescription was recorded among 72 practicing doctors (42 consultants and 30 general physicians). A well designed Performa was distributed to all general physicians & consultants to fill the required information. According to inclusion criteria all practicing General Physicians & consultants were included. The non-practicing doctors such as radiologists, Pathologists & administrators were excluded from the study. House job doctors were also excluded from the study. All performas were collected and data was analyzed by using SPSS-21.

RESULTS

Among 72 doctors, 71 (98.61%) stated that they prescribe opioids for acute and chronic pain. The rate of opioid prescription among doctors (table 1).

Table No.1: Prevalence of opioid prescription

S No	Type of doctor	No of doctors	%
1	Consultant Surgeons	21	29.16
2	Consultant Physicians	20	27.77
3	General physicians	30	41.66
4	Not prescribing opioid analgesics	1	1.38

Injectable opioids alone (such as nelbuphine & morphine) were used by two (2.77%) doctors particularly anesthetists. Tablets of opioid analgesics (tramadol) alone were used by 9.72% of doctors particularly general physicians. Both tablets & injections of opioid analgesics were used by 87.50% of doctors particularly by consultant physicians including cardiologists (table 2).

Table No.2: Pattern of opioid prescription

S.No		No. of doctors	%
1	Only Tablets	7	9.72
2	Only Injections	2	2.77
3	Both tablets & injections	63	87.50

Opioid analgesics were frequently prescribed by 30 (41.66%), sometimes by 18 (25%) and rarely by 23 (31.94%) of doctors (Table 3).

Table No. 3: Trend of opioid prescription

S.No		No. of doctors	% of doctors
1	Frequently	30	41.66
2	Sometimes	18	25
3	Rarely	23	31.94
4	Non	1	1.38

A significant number (41;56.94%) of the doctors stated that they did not counsel their patients about options, risks and consequences of use of opioid analgesics because of lack of time as they have to treat a lot of patients and they think that use for one time did not need it. None of the doctors identify risk factors before opioid prescription.

DISCUSSION

Over the past three decades, opioid analgesic prescriptions and their adverse consequences has increased mainly due to misinformation that opioids are highly effective and safe analgesics. Lack of knowledge

about guidelines to prescribe opioids and inaccurate belief of under treatment of pain also contributed. Now main aim is pain reduction to minimum bearable level and zero pain is considered as unrealistic expectation.²² The vast range of opioid side effects and risk of overdose due to tolerance, misuse due to euphoria and addiction due to physical dependence & euphoria explains the fact why opioids are among the most common cause of adverse drug events in the hospital. This study showed that there is a recent trend of increased use of opioid analgesics and majority of doctors (98.61%) prescribed opioid analgesics for acute and chronic pain. These results are similar to findings by Manchikanti L et al (2012) and Cramer JD et al in 2018; in USA.^{16,23} However the only difference is that in Pakistan there were scanty Pain specialists. In a study by Bell EA (2017) it was shown that opioid prescription in adults and in pediatric patients both has increased risk of pediatric injuries, poisonings and misuse particularly by adolescents. The rate of children and adolescents hospitalization for opioid drug poisoning has increased 300 times from 1997 to 2012 in USA.²⁴ Many countries are facing epidemic of misuse of opioid prescription and USA has declared it as a public health crisis on 26-10-2017, ordering state authorities to take prompt measures to reduce opioid prescriptions. Since 1990 when zero pain strategy was adopted and opioids were falsely considered as potent safe analgesics, opioid analgesic prescriptions has increased many folds resulting to a lot of complications.²⁵

Doctors are responsible to relieve or reduce patient's pain at all costs. However increasing trend is noticed about use of opioid analgesics which can lead to opioid use disorder (OUD), opioid abuse and addiction. Opioid prescription can be reduced by doctor's awareness about recent guidelines for use of opioids. Counseling of the patients about alternate options and awareness of consequences of opioid analgesic use can help the patients to reduce the choice of opioid usage.

Non-opioid analgesic measures considered as first line treatment for any type of pain are acetaminophen, non-steroid anti-inflammatory drugs (NSAIDs), pregabalin, dexamethasone, local anesthetics, ketamine and non-drug methods. Opioid analgesics are effective for moderate to severe types of pain but due to vast range of side effects these drugs should be used as 2nd line analgesics or when non-opioid analgesic are ineffective to control pain.¹³ According to a survey report by the United Nations office on drug and crime in 2013 found that more than 6.7 million Pakistanis have used opioids in 2012 alone.²⁶ Pakistan is more prone to develop opioid epidemic due to its limited resources, poverty, low literacy rate and increasing opioid production in Afghanistan making its way to Pakistan. However it can learn lesson from America's opioid epidemic to reduce opioid prescription by active education of doctors and medical students to follow recent

guidelines to prescribe opioid analgesics. Moreover, promotion of pain management concept by multimodal methods to minimum bearable level instead of zero level and judicious use of opioids can also help to reduce use of opioid analgesics.

Adjuvant non-pharmacological measures like early patient's mobilization, physiotherapy, exercise, heat or cold therapy can also help to reduce pain to minimum bearable level.²¹

CONCLUSION

Opioid analgesics are commonly prescribed by almost all doctors often without following proper guidelines and counseling. This trend can result in impending opioid epidemic in Pakistan which can be avoided by educating doctors and medical students about opioid prescription guidelines, proper selection, counseling & monitoring of patients.

Author's Contribution:

Concept & Design of Study:	Muhammad Farooq
Drafting:	Sadiq Hussain, Tufail Hussain
Data Analysis:	Sajid Razzaq, Sultan Shah, Muhammad Nadeem
Revisiting Critically:	Muhammad Farooq, Sadiq Hussain
Final Approval of version:	Muhammad Farooq

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Li RM. Opioids. In Lippincott Illustrated reviews Pharmacology. Karen Whalen (editor). 7th edition, Wolters Kluwer Philadelphia. 2019: 180-81
2. Vadivelu N, Gill HS, Kodumudi G, Kaye AJ, Usman RS, Kaye AD. Practical guide to the Management of Acute and Chronic pain in the presence of Drug Tolerance for the Health care practitioner. Pain Reports. 2017.
3. Schumacher MA, Basbaum AI, Naidu RK. Opioid Agonists & Antagonists. In: Basic & Clinical Pharmacology Betram G. Katzung, editors. 14th edition. Chenni 2018.p.553-4.
4. Macintyre PE, Schug SA, Scott DA, Visser EJ, Walker SM. Acute pain management: scientific evidence. 3rd ed. ANZCA & FPM, Melbourne; 2010.
5. Compton WM, Boyle M, Wargo E. Prescription opioid abuse: problems and responses. Prev Med 2015;80:5-9.
6. Macintyre PE, Huxtable CA, Flint SL, et al. Cost and consequences: a review of discharge opioid prescribing for ongoing management of acute pain. Anaesth Intensive Care 2014;42: 558-574.

7. Shanmugam VK, Couch KS, Mc Nish, et al. Relationship between opioid treatment and rate of healing in chronic wounds. *Wound Repair Regen* 2017; 25: 120-130.
8. Clark H, Soneji N, Ko DT, et al. Rates and risk factors for prolonged opioid use after major surgery: population based cohort study. *BMJ* 2014; 348:g1251.
9. Roy S, Wang J, Kelschenbach J, et al. Modulation of immune function by morphine : implications for susceptibility to infection. *J Neuroimmune Pharmacol* 2006;1:77-89.
10. Minkowitz HS, Gruschkus SK, Shah M, et al. Adverse drug events among patients receiving postsurgical opioids in a large health system: Risk factors and outcomes. *Am J Health Syst Pharm* 2014; 71: 1556-1565.
11. Steyaert A, Lavand' home P. Postoperative opioids: let us take responsibility for the possible consequences. *Eur J Anaesthesiol* 2013; 30: 50-52.
12. Waljee JF, Li L, Brumett CM, et al. Iatrogenic opioid dependence in the United States: are surgeons the gatekeepers? *Ann Surg* 2017;265: 728-730.
13. Kremer MJ, Griffis CA. Evidence Based Use of Nonopioid analgesics. *AANA J* 2018;86(4): 321-27.
14. Smith HS, Elliott JA. Opioid induced Androgen deficiency (OPIAD). *Pain physician* 2012; 15: ES 156. ISSN2150-1149.www.pain.physicianjournal.com.
15. Van Zee A. The promotion and marketing of oxycontin: comertial triumph, public health tragedy. *Am J Public Health* 2009; 99: 221-227.
16. Manchicanti L, Standford H, Fellows B et al. Opioid epidemic in the United States. *Pain Physician* 2012;15:ES9-E38.
17. Davies EC, Green CF, Taylor S, et al. Adverse drug reactions in hospital in-patients: a prospective analysis of 3695 patient episodes. *PLoS One* 2009; 4: c4439.
18. Davis J. Trump declares opioid crisis a “health emergency” but requests no funds. *The New York Times*. October 26, 2017.
19. Levy B, Paulozzi L, Mack KA, et al. Trends in opioid analgesic prescribing rates by speciality, US, 2007-2012. *Am J Prev Med* 2015; 49:409-413.
20. Ashburn M et al. Prescribing guidelines for Pennsylvania: Treatment of Pain in Emergent Setting. *Commonwealth of Pennsylvania College of Emergency Pysicians* 2018;22:1-5.
21. Damir Y. Non-pharmacological therapies in pain management-current issues and opinions. In: Dr Gabor, editor. ISBN 2012;978,953, 307, 813-7.
22. Alam A, Gomes T, Zheng H, et al. Long term analgesic use after low risk surgery: a retrospective cohort study. *Arch Int Med* 2012; 172:425-430.
23. Busse JW, Wang L, Kmaleldin M, et al. Opioids for chronic non-cancer pain: a systemic review and meta- analysis. *JAMA* 2018; 320(23):2448-2460.
24. Bell EA. Addressing a pediatric Health epidemic: Implications of the opioid crisis. *Infectious diseases in children. Healio, pediatric pharmacol consult* 2017 online.
25. Cramer JD, Wisler B, Gouveia CJ. Opioid stewardship in otolaryngology: state of the art review. *American Academy of Otolaryngology, Head and Neck Surgery Foundation* 2018; 158(5): 817-827.
26. Drug use in Pakistan 2013.repot-UN office on drugs and crime, 2013.