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The Assessment of Postoperative Levels of Pain with Reference to Validated Protocols at a Hospital in Karachi Pakistan

Abdul Haque, Shua Nasir, Haris Jameel, Muhammad Absar Anwar, Saqib Basar, Ahmed Ali

Authors

1. Dr. Abdul Haque
Resident, Emergency Medicine
Zia-ud-din University & Hospital
North Nazimabad, Karachi

2. Dr. Shua Nasir
Resident, Emergency Medicine
Ziauddin University & Hospital
North Nazimabad, Karachi

3. Dr. Haris Jameel
Resident General Surgery, Dow International University Ojha Campus, Karachi

4. Dr. Muhammad Absar Anwar
House Officer
Dow University of Health Sciences Karachi

5. Dr. Saqib Basar
House officer,
Civil Hospital, Karachi

6. Dr. Ahmed Ali
Research Fellow
A-139 Block-I North Nazimabad, Karachi

Corresponding Author
Dr. Ahmed Ali
Research Fellow, A-139 Block-I
North Nazimabad, Karachi
Contact: +92 333-2143259
Email: doctor.karachi@gmail.com

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ABSTRACT

Objective: The aim of study is to assess the postoperative levels of pain in accordance with established protocols. **Method:** The type of study is a hospital wide survey conducted from February 2014 to April 2014, at department of surgery and associated wards, at a tertiary care hospital in Karachi Pakistan. World Health Organization pain scoring system was used as a base to develop a questionnaire to assess the level of pain. The results were correlation with various other variables involved. **Results:** The study was conducted on 200 patients out of whom 38% (n=76) were males having mean age of 44.16 ± 20 and 62% (n=124) were females having mean age of 36 ±14.5 years. Generally patients experiences mild pain (40%), moderate (39%) severe (16%) and no pain (5%) when recorded after 24 hours postoperatively. While after 48 hours the scores recorded for the same patients were as, mild (56%), moderate to severe (34%) and in the no pain group (10%) of patients were recorded. **Conclusion:** It is noted that absolute pain free surgeries are not possible at the moment, but with the use of latest advancements in the field of health sciences, post-operative pain can be minimized and should be the one of the prime goals for a good surgical outcome.

Keywords: Postoperative pain management, Acute pain, Analgesic, Anesthesia, General surgery, WHO pain management score, Pain relief.

Legend: Numeric Analog scale = NAS, Verbal analogue scale = VRS, Visual analog scale = VAS, Faces scale = FS, General Anesthesia = GA, Neuropathic Pain Scale = NPS.

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INTRODUCTION

Pain can be defined as an unpleasant sensation or emotion, which is associated with an actual or potential damage to the tissues[1] According to the commission on Provision of Surgical Services report of 1990, approximately 75% of patients suffer from pain of moderate or severe intensity in the post-operative period. The main culprit was found to be the lack of proper training of the medical and nursing personnel.[2] The process of pain management starts before the procedure, by giving the patient analgesia. Measures are also taken during and after the procedure. As pain is subjective, pain management methods are adjusted for each individual patient. According to a study, the poor pain management results in poor practice of medicine and is a violation of basic human right.[3]

According to a recent study about 68.7% of patients have severe to moderate pain one first post op day, and that is reduced to about 51.7% on second post op day.[4] For the management of pain international authorities have devised various guidelines for pain management, in order to reduce the post-operative pain.[5] In a country like Pakistan numerous studies have been done on the management of post-operative pain, we wanted to conduct the study in our city of Karachi.[6,7,8] The objective of our study was to find out the effectiveness or available methods of post-operative pain management, and to correlate it with other important variables, also to compare the existing methods in use, with internationally devised protocols and guidelines.

METHODOLOGY

The type of study is a hospital wide survey conducted from February–April 2014, at department of surgery and associated wards, at a tertiary care hospital in Karachi Pakistan. For the purposes of patient selection a nonrandom convenience sampling method was used. All the patients belonging to the adult population who underwent an operative procedure under general anesthesia were included in the study. The exclusion criteria was underage patients, patients who remained unconscious, those with very poor prognosis, unstable vitals, and those refusing to participate in the study. A biographical data of patients was collected which included, name, gender, age, type of surgery performed, duration of surgery, drugs prescribed, pre op, during the procedure and post op and the method of delivery for these drugs.

Different scales have been developed for the assessment of pain such as, numeric analogue scale, verbal analogue scale, visual analogue scale and faces scale for children. The numeric analogue scale is a 101mm line which is divided into 11, 21 or 101 point scale. The two corners of the line indicate no pain, and the worst pain ever, the patient designates his level of pain either verbally of through graphic scale. Verbal analogue scale is a descriptive type of scale in which objectives are used to denote the pain intensity. Such as no pain, mild pain, moderate pain, severe pain, very severe pain and worst possible pain. Non parametric statistics is used to analyze the data. Visual analogue scale is a 10cm line and the end points denote no pain, and worst pain possible. All the three scales are considered reliable but the most reliable scale is considered to be the visual analogue scale when repeated frequently, 90% values are similar.[9,10] All the pain score using various scales were recorded separately (NAS, VRS, VAS). A combined cumulative pain score was generated by combining all the three pain scales. Data was recorded by a single researcher. The score were recorded two time, after 24 hours after surgery and second 48 hours after the surgical procedure. Patients were divided into groups of mild or controlled pain (1-4), moderate or satisfactory pain (5-7), and severe or poor pain (8-10). Royal College of Anesthetists guidelines was used for comparison of adequate control of pain.[11] The intensity of pain was also correlated with other variables.

RESULTS

The study was conducted on 200 patients out of whom 38% (n=76) were males with a mean age of 44.16 +/- 20 and 62% (n=124) were females with a mean age of 36 +/-14.5 years. The distribution of cases was as follows, 61% (n=122) were laparoscopic cholecystectomy and coronary artery bypass graft, both of which were performed under general anesthesia and under 2 hours. 38% (n=76) of surgeries took greater than 6 hours. Tramadol (76%), Diclofenic Sodium (74%), Ketorolac (52%) and Acetaminophen (55%), were the most commonly used drugs.

Table 1: Combined pain scores for 24 and 48 hours (N=200)

	Pain score after 24 hours		Pain score in 48 hour	
Pain score	**Frequency**	**%age**	**Frequency**	**%age**
No pain	10	5%	20	10%
Mild or controlled pain control (1 - 4)	80	40%	112	56%
Moderate or satisfactory pain control (5 - 7)	78	39%	66	33%
Severe or Poor Pain control (8 - 10)	32	16%	2	1%

Generally patients experiences mild pain (40%), moderate (39%) severe (16%) and no pain (5%) when recorded after 24 hours postoperatively. While after 48 hours the scores recorded for the same patients were as, mild (56%). Moderate to severe (34%) and in the no pain group (10%) of patients were recorded. Refer to tables 1, 2 and 3.

Table 2: Post-operative pain score after 24 hours

Scale	No Pain	Mild Pain	Moderate Pain	Severe Pain
VAS	2.9%	49.3%	28.8%	19%
NAS	5.4%	38.5%	41%	15.1%
VRS	8.3%	33%	47.7%	11%

Table 3: Post-operative pain score after 48 hours

Scale	No Pain	Mild Pain	Moderate Pain	Severe Pain
VAS	14.7%	53%	35.3%	0
NAS	6.7%	57.7%	34.9%	0.7%
VRS	8.1%	51.7%	36.9%	3.4%

DISCUSSION

According to a study by Friedham et al 49% (n=106) patients scored a pain score of 4, when interviewed using the Neuropathic pain scale,[12] in our study 5% and 10% of patients were pain free in the 24 and 48 hours after surgery. In a large meta analytical study on postoperative pain management effectiveness, the incidence of post-operative pain having an intensity in the range of moderate to severe pain was 29.7% and severe pain was 10.9%. The mean incidence of poor pain relief was 3.5% and fair to poor pain relief was 19.4% in the study conducted on 20,000 patients.[13] In a study conducted in France in 2008, 26.9% (n=512) patients experienced severe pain on post-operative ambulation in the initial 24 hours after surgery.[14] When post-operative pain management is no adequate one of the main objectives on treatment are not achieved, it is the pain suffered, which causes the patient to seek help in the first place, despite advancements in the field of medicine and surgery pain management still remains a big challenge to the physicians.[15] Who introduced the concept of analgesic ladder, in1986 for cancer pain.[16] While the analgesic ladder remains a rather safe system, it is not suitable for the management of post-operative pain. The World Federation of Societies of Anesthesiologists modified the pain ladder to make it more applicable to the post-operative pain management, burns and trauma. According to the modified analgesic ladder, the starting point is from the top, when the pain is the most severe in intensity, which is the immediate period following surgery. Regional anesthetic techniques, strong opiods and non opiods analgesia is used at this point. And as time progresses and the need for pain management decreases the ladder is downgraded accordingly.[17] In our study NSAIDS and weak opiods were the mainstay of treatment. Tramadol (76%), Diclofenic Sodium (74%), Ketorolac (52%) and Acetaminophen (55%), were the most commonly used drugs. In a publication by the Royal College of Anesthetists and British Pain Society, on effective pain management, it was recommended that all hospitals should be equipped with the latest provisions for management of acute pain, and a multidisciplinary approach should be undertaken involving all the medical, nursing and pharmacy stuff. There should be local guidelines and training of the staff for appropriate pain management.[18] The National Health Service published a similar article on the principles of post-operative pain management[19] In Pakistan only a few tertiary care hospitals have specialized departments for provision of acute pain management services.[8] In our setup there was no specialized department and the doctor at hand was responsible for the management of pain, but it was not satisfactory.

CONCLUSION

Absolute pain free surgeries are not possible at the moment, but with the use of latest advancements in the field of health sciences, post-operative pain can be minimized and should be the one of the prime goals for a good surgical outcome. It is imperative that doctors and nursing staff be trained in the proper use of analgesics for post-operative pain management.

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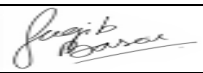
AUTHORSHIP AND CONTRIBUTION DECLARATION

Name of Author	Contribution to the paper	Author's Signatures
Dr. Abdul Haque	Concept, layout, drafting, statistics	
Dr. Shua Nasir	Drafting, Writeup, analysis	
Dr. Haris Jameel	Data collection, entry analysis	
Dr. Muhammad Absar Anwar	Data entry, data collection, Writeup	
Dr. Saqib Basar	Write up, final layout	
Dr. Ahmed Ali	Analysis, final layout