ORIGINAL ARTICLE

Analgesia Requirements in Patients Undergoing Open vs. Endoscopic Procedures

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ABSTRACT

Aim: Patients undergoing open and endoscopic procedures were assessed to evaluate the extent of analgesics they demanded post operatively.
Setting: Avicenna Medical College and Hospital, Lahore
Design: A Retrospective and observational study of 100 male and female patients in the Urology department.
Method: One hundred patients admitted into the urology ward were studied over a period of 6 months, from March 2019 to September 2019. Patients undergoing suprapubic cystostomies, extracorporeal shockwave lithotripsy, and percutaneous nephrostomies were excluded from this study. Basic analgesic requirements of patients were researched and data was accumulated. Lastly, patients were studied for effective pain management through multiple agents (Opioid receptor agonists, NSAIDS, and Paracetamol), and routes (Oral, Intramuscular, and Intravenous).
Results: Post-operative pain management was noted in patients after multiple open (cystolitholapaxy) procedures. The criteria for pain management were based on patient self-assessment through the medium of a numerical scale. On the scale the numbers ranged from 1 to 10, 1 being the lowest intensity of pain and 10 being the maximum.
Conclusion: It was observed that in immediate post operative period that on the 1st and 2nd post operative day the injectable (IM, IV infusion) of NSAIDS or Paracetamol provided desirable satisfactory analgesia with short onset and prolonged effect. Intravenous opioid receptor agonists remained the 2nd line where NSAIDS were ineffective. Sometimes combination of both NSAIDS and Opioid receptor agonists were required. On 3rd post operative day patients were shifted to oral analgesia; and oral NSAIDS alone were sufficient enough to relieve pain in both groups.
Keywords: Post-operative analgesia, pain management, Endoscopic procedures, open procedures, NSAIDS,

INTRODUCTION

Pain relief is of utmost importance for patients undergoing surgical procedures, as well as for the doctors who are treating them. Through the appropriate management of post-operative pain a physician can provide the patient with an excellent experience at the hospital. The main objective is to treat and reduce discomfort through the most simple and straight forward modality. In surgical patients pain is one of the most common symptoms in which healthcare assistance is required[1]. Adequate pain management results in shorter hospital stays, earlier mobilization, reduced hospital costs, and an increase in patient satisfaction[2]. To achieve effective analgesia prompt intervention of physician and patient compliance is very important. Appropriate routes, agents, and modes can be used to support a multimodal approach to combat post-operative pain and reduce expected and unexpected adverse effects[3]. Objective measurements of pain, is relatively impossible to calculate, the best modality we have is patient self-assessment by way of numerical rating scale4. Due to the importance of post-op pain proper physician assessment, patient compliance, and use of the appropriate mode of analgesia is required to provide pain relief[5]. Pain is an essential element after surgery and this study is compiled in the Dept of Urology, Avicenna hospital in order to determine the best medium of pain relief.

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METHOD

One hundred patients admitted into the Urology ward at Avicenna Hospital were studied over a period of 6 months, from March 2019 to September 2019. Patients undergoing suprapubic cystostomies, extracorporeal shockwave lithotripsy, and percutaneous nephrostomies were excluded from this study. Basic analgesic requirements of patients were researched and data was accumulated. The method for patient assessment was obtained through a numerical rating scale. The information gathered from the patients was utilized and incorporated in this study. Lastly, patients were studied for effective pain management through multiple agents (Opioid receptor agonists, NSAIDS, and Paracetamol), and routes (Oral, Intramuscular, and Intravenous).

RESULTS

Post-operative pain management was noted in 100 patients after multiple open procedures such as: extended pyelolithotomy, radical nephrectomy, ureterolithotomy, vesicolithotomy and endoscopic procedures such as: TURP, TURBT, Ureteroscopy and cystolitholapaxy. The criteria for pain management were based on patient self-assessment through the medium of a numerical scale. The values provided on the scale were from 1 to 10, 1 being the least and 10 being the maximum amount of pain. The relief of pain was studied throughout a 10 day period for both open and endoscopic surgeries. On collection of the data it

was noted that most patients undergoing endoscopic procedures required less quantity of analgesia and for less duration after surgery. Most of them were pain free after 5 days and did not require analgesia after that. On the other hand patients undergoing open surgeries required more quantity of analgesia with occasional combination therapy.

Table 1

	Male	Female
Endoscopic procedure		
TURBT	7	1
TURP	12	0
Ureteroscopy	6	0
Cystolitholapaxy	19	21
Open procedure		
Extended Pyelolithotomy	6	5
Radical Nephrectomy	5	6
Ureterolithotomy	7	2
Vesicolithotomy	1	2

The three analgesics that were used for analysis were Paracetamol, NSAIDS, and Opioid receptor agonists. The mentioned analgesics were utilized in oral, intramuscular, and/or intravenous infusion. 70 % patients (open + endoscopic) were satisfied with injectable NSAIDS or Paracetamol infusion in immediate post operative period. These patients were then shifted to oral NSAIDS or Paracetamol after 3rd post operative day.

10% of patients were managed with injectable Opioid receptor agonists after failure of NSAIDS and paracetamol. 20% Patients required combination of both NSAIDS and Opioid receptor agonists to achieve analgesia. Most patients requiring combination therapy had open procedures. Patients who underwent endoscopic procedures were usually managed with mono therapy for pain. Adverse effects of drugs were not taken into consideration; only the affectivity of the drug was used

Fig.1: Procedure breakdown

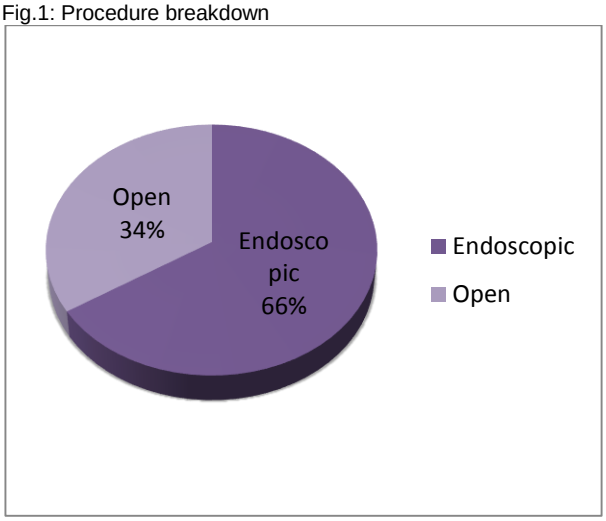


Fig. 2: Surgical Analysis of Patient

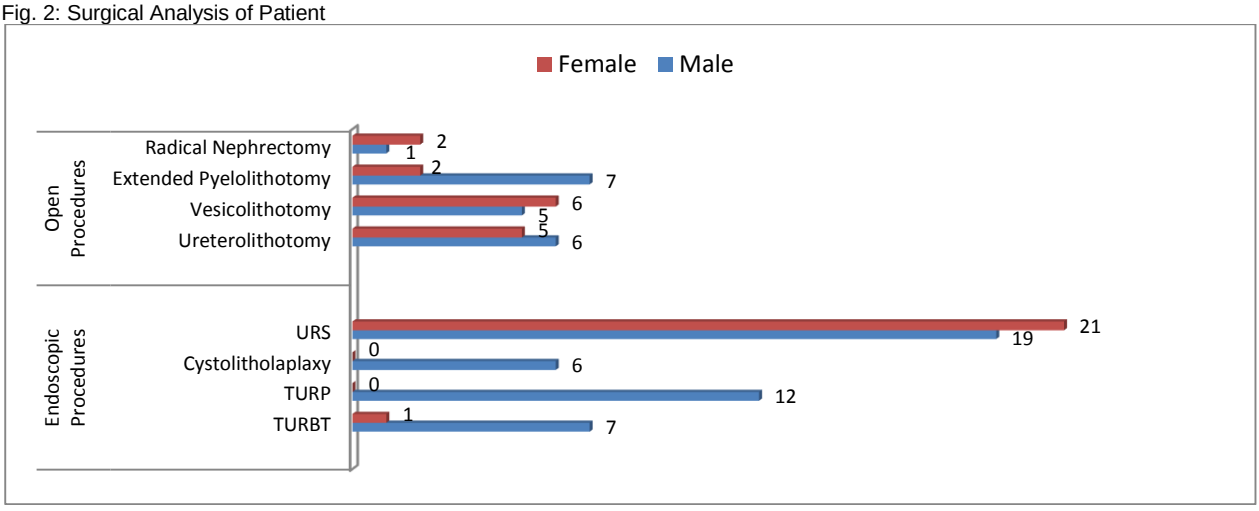
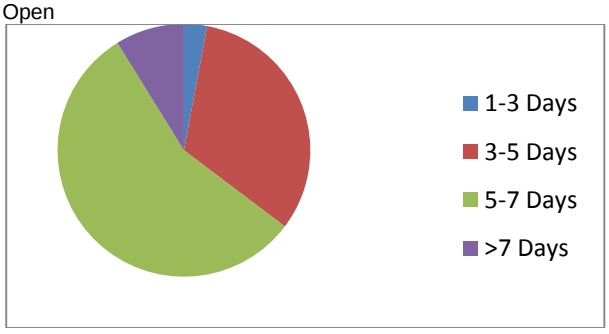


Fig. 3: Measurement of pain relief postoperatively.

Open



Endoscopic

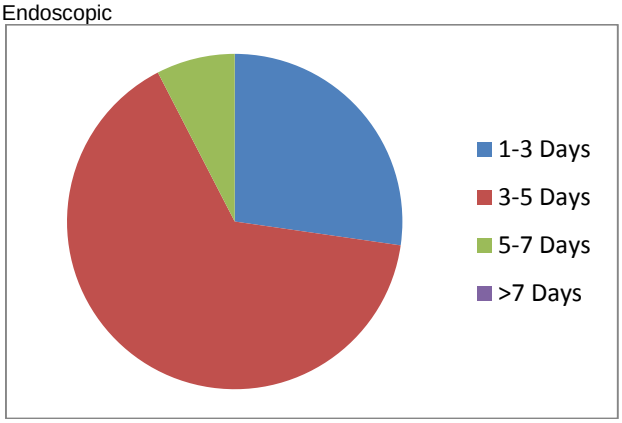


Fig.4: Analgesic relief for endoscopic procedure

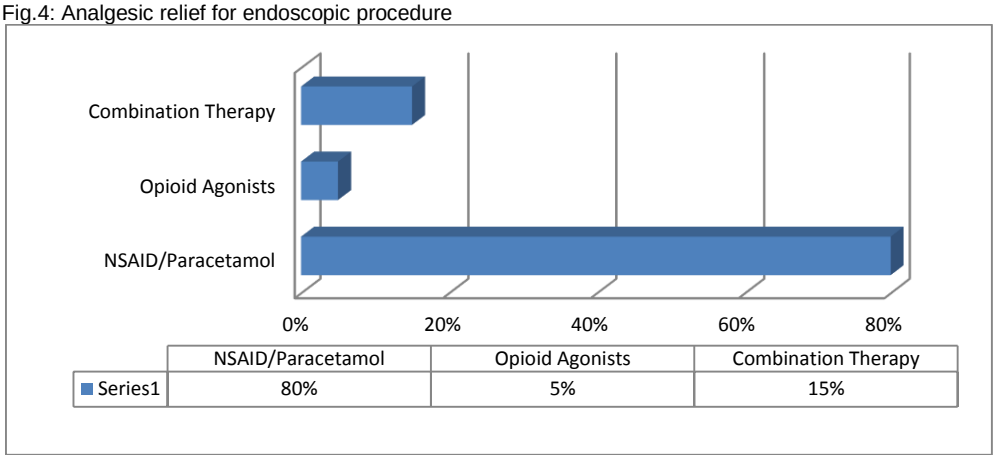


Fig.5: Analgesic relief for open procedure

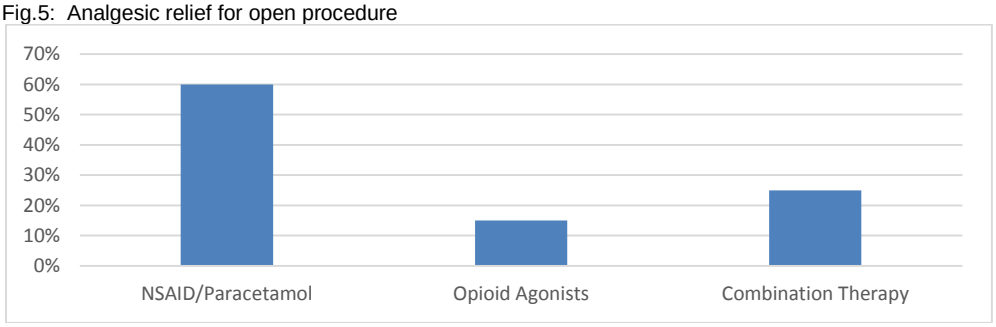


Fig.6: Overall pain relief

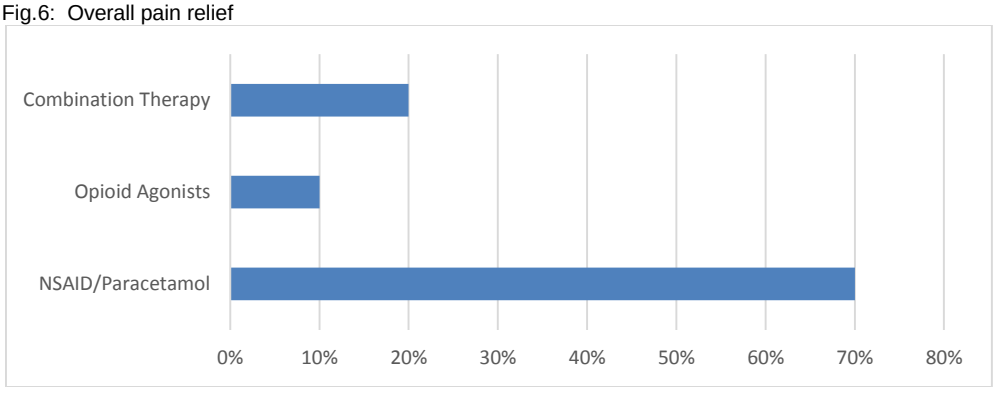
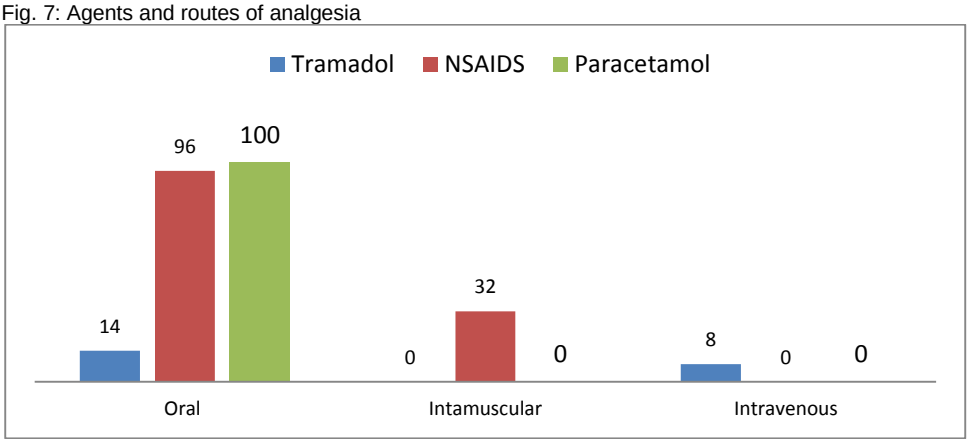


Fig. 7: Agents and routes of analgesia



DISCUSSION

In our study it was calculated that overall oral NSAIDs provided the most satisfactory results in the relief of post-operative surgical pain. Using a numerical rating scale for patient self-assessment we were able to correctly diagnose the patient's reactions to given analgesics. Oral Paracetamol by itself was not effective, but concomitant treatment with NSAIDS resulted in an increase affectivity of the management of pain[6,7] . On the other hand the fastest effect was provided by opioid receptor agonists through the intravenous route, further research can be conducted to evaluate its duration of effect (8). Patients provided an oral low dose of tramadol with oral Paracetamol experienced less side effects compared to individuals ingesting only oral high dose of opioid receptor agonists; which was a result similarly seen in previous researches (9). Although intravenous Paracetamol is relatively safe and contains a lower side effect profile, it did not provide adequate relief of pain in our post-operative patient population[10].

In comparison between open and endoscopic procedures, more analgesic support was required for open procedures. This led to an increase in hospital stay for patients undergoing Ureterolithotomy, Radical Pyelolithotomy, and Vesicolithotomy. The acute pain that results in patients post-operatively should be tackled head on in order to inhibit it from converting into chronic pain, which can last up to 6 months. Further studies should also be considered in the field to study the differences between the pain requirements between genders. A previous study indicates the women are more prone to exhibit greater pain sensitivity, have an increased risk of chronic pain, and a reduced capacity for pain inhibition when compared to men[11]. Inquiries into the field of pain management can help us resolve patient related issues in the hospital and help lead them to a more fulfilled life.

CONCLUSION

It was observed that the most satisfactory agents used to relieve immediate post-operative surgical pain were injectable NSAIDS, with Opioid receptor agonists at a distant second. In both endoscopic and open procedures injectable NSAIDS provided the best results with the shortest onset and prolonged effect. More over patients undergoing endoscopic procedures required less analgesia and early withdrawal of analgesics as compared to patients undergoing open procedures. After 3rd post operative day patients were managed with oral NSAIDS satisfactorily whether open or endoscopic till they become asymptomatic.

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