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The Efficacy of Pre-Operative Analgesics Compared with Standard Extraction Procedure: A Double-Blind Study.

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ABSTRACT

To analyze the efficacy of pre-operative analgesics administered in a standard extraction procedure and to compare it with standard extraction procedure based on level of analgesia experienced by the patient. Two groups were chosen each containing 10 patients, group one patients were administered pre-operative analgesic {ZERODOL-P } (film-coated tab: aceclofenac 100 mg, paracetamol 325 mg) 1 hour before the procedure, followed by post operative analgesics. The group two underwent a standard extraction along post operative analgesics. The level of peri operative and post operative discomfort were assessed using questionnaire. Pre-operative analgesic techniques use various agents to block receptor activation, and inhibiting the production of pain neurotransmitters, thus reducing peri-operative and post-operative pain. The effective relief of pain is of utmost importance in a surgical extraction procedure. Analgesia administered before the painful stimulus occurs, may prevent subsequent pain by inhibiting central sensitization.

Keywords: pre-operative, analgesic, double-blind study.

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INTRODUCTION

In recent times, pain relief is increasingly becoming an important perioperative as well as a postoperative quality measure. The goal for surgical pain management is to reduce or eliminate pain and discomfort with a minimum of side effects. Various agents (opioid vs. nonopioid), routes (oral, intravenous, neuraxial, regional) are assessed to reach the maximum pain control and comfortness in surgical procedures ⁽¹⁾ Effective pain control is a major priority for clinical research in surgical practice. Analgesia improves the quality of life postoperatively, reducing morbidity and providing greater comfort, allowing for rapid recovery and early return of patients to daily activities ⁽²⁾

The administration of pre operative analgesia concept was introduced by Crile at the beginning of the last century. Blocking the transmission of pain before surgical incision reduced postoperative mortality. This technique was first proposed in order to prevent postoperative shock⁽³⁾. Pre- operative analgesic administration can be defined as an intervention given before surgery, which makes it more effective than treatment administered after incision or surgery⁽⁴⁾.

METHODOLOGY

Research Design: Descriptive in nature

Sampling technique: Samples collected from patients who underwent Extraction

Sample Size: 20 Respondents

Method:

A total of 20 patients who required extraction of grossly decayed molars were chosen. The criterias included were patients of age group 20-50 years, with no sex prediction. Medically compromised patient were excluded from the study. Group one patients were given pre-operative analgesics (ZERODOL-P film-coated tab: aceclofenac 100 mg, paracetamol 325 mg) 1 hour before the procedure, followed by post operative analgesics. Group two patients underwent a standard extraction procedure followed by post operative analgesics. After extraction, the patients were asked to fill a questionnaire based on the level of peri-operative and post operative discomfort. The results were analyzed statistically.

Data collective instrument: Questionnaire

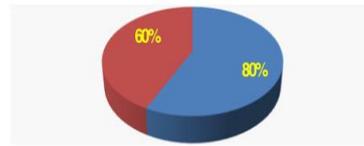
Data analysis and conclusion:

To synchronize the data received through questionnaire and analyze the efficacy of pre- operative analgesic in a pain reduction compared with standard extraction procedure.

1. Expearence of Extractioin Procedure

Response	With Analgesics	Without Analgesics
Comfortable	80%	60%
Uncomfortable & Painful	20%	40%

Comfortness of the procedure

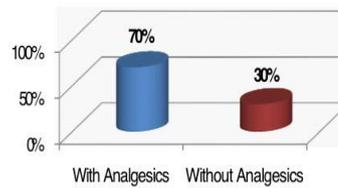


■ With Analgesics ■ Without Analgesics

2. Amount of Pain felt

Response	With Analgesics	Without Analgesics
Mild	70%	30%
Moderate	20%	60%
Severe	10%	10%

Pain Control

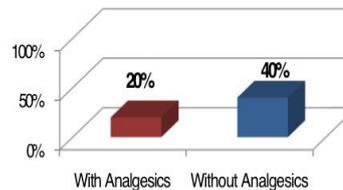


With Analgesics Without Analgesics

3. Level of anxiety during the procedure

Response	With Analgesics	Without Analgesics
Mild	20%	40%
Moderate	50%	30%
Severe	30%	30%

Level of anxiety

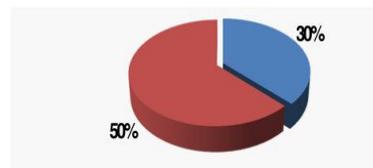


With Analgesics Without Analgesics

4. Presence of Peri operative pain

Response	With Analgesics	Without Analgesics
Yes	30%	50%
No	70%	50%

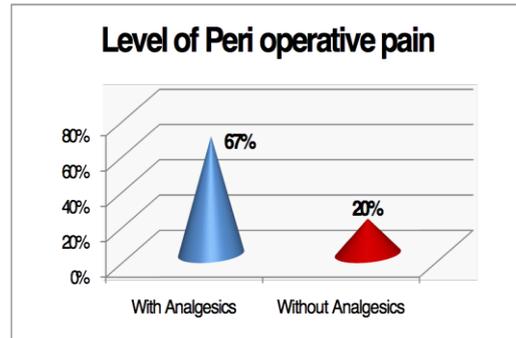
Presence of Peri operative pain



■ With Analgesics ■ Without Analgesics

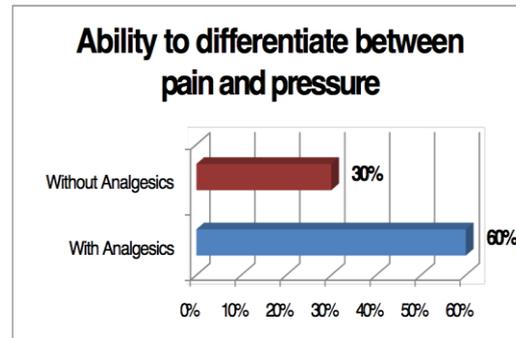
5. Level of Peri operative pain

Response	With Analgesics	Without Analgesics
Mild	67%	20%
Moderate	33%	40%
Severe	0%	40%



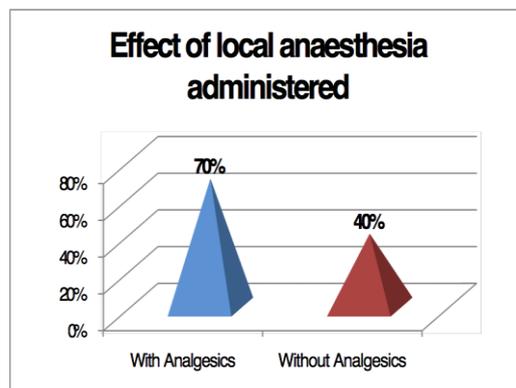
6. Ability to differentiate between pain and pressure

Response	With Analgesics	Without Analgesics
Yes	60%	30%
No	40%	70%



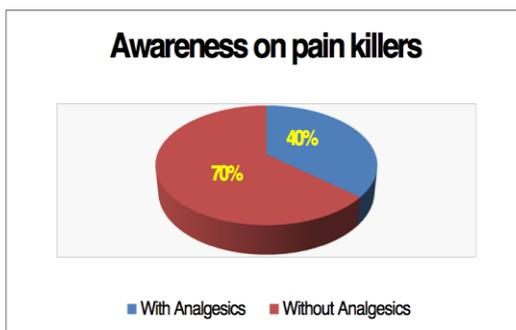
7. Effect of Local anaesthesia administered

Response	With Analgesics	Without Analgesics
Painless	70%	40%
Painful	20%	30%
Not sure	10%	30%



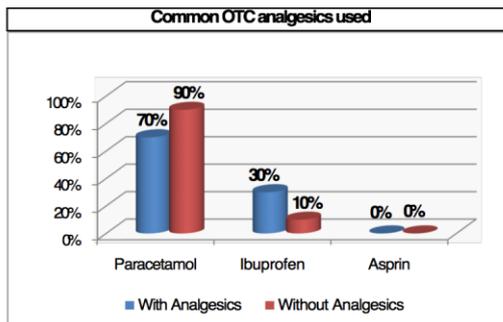
8. Awareness on pain killers

Response	With Analgesics	Without Analgesics
Yes	40%	70%
No	60%	30%



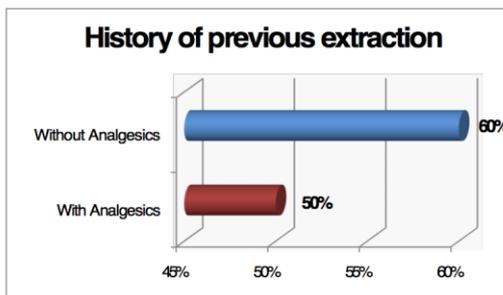
9. Common OTC analgesics generally used

Response	With Analgesics	Without Analgesics
Paracetamol	70%	90%
Ibuprofen	30%	10%
Asprin	0%	0%



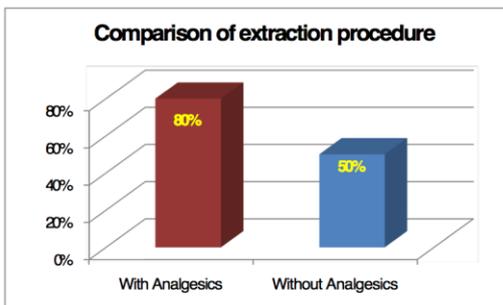
10. History of previous extraction

Response	With Analgesics	Without Analgesics
Yes	50%	60%
No	50%	40%



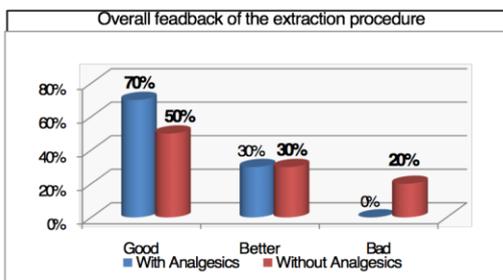
11. Comparison of previous and present extraction procedure

Response	With Analgesics	Without Analgesics
Comfortable than previous	80%	50%
Painful than previous	20%	50%



12. Overall feedback of the extraction procedure

Response	With Analgesics	Without Analgesics
Good	70%	50%
Better	30%	30%
Bad	0%	20%



Statistical analysis:

Chi- Square test:

Level of comfortness	With analgesics	Without analgesics	Total
Comfortable	8	6	14
Uncomfortable	2	4	6
Total	10	10	20

To check whether there is any significant relation between the level of comfortness experienced by the patients undergoing extraction with pre-operative analgesics and without pre-operative analgesics as a standard extraction procedure. Null Hypothesis H₀= There is no significant relation between pain control and administration of pre-operative analgesics

Alternate Hypothesis H₁= There is significant relation between pain control and administration of pre-operative analgesics

N= 20

$$(A_i B_j)_e = (A_i * B_j) / N$$

$$(8)_e = (10 * 14) / 20 = 7$$

$$(2)_e = (10 * 6) / 20 = 3$$

$$(6)_e = (10 * 14) / 20 = 7$$

$$(4)_e = (10 * 6) / 20 = 3$$

OBSERVED(O)	EXPECTED(E)	(O-E) (O-E)	(O-E) (O-E)/E
8	7	1	0.142
2	3	1	0.333
6	7	1	0.142
4	3	1	0.333
		Total	0.950

RESULTS

From Tables for (r-1) and (c-1) degrees of freedom,

Where, r = No. of Rows
 c = No. of columns
 $(2-1)(2-1) = 1$ d.f.
 $\chi^2_{tab} = 3.84$ (At 0.05)
 since, $\chi^2_{cal} < \chi^2_{tab}$
 H₀ is accepted

There is no significant relation between pain control and administration of pre-operative analgesics

DISCUSSION

From the survey it is been understood that nearly 80% of the people feel comfortable when the treatment is done by administering pre-operative analgesics before the procedure. The amount of pain control is much more enhanced to about 70% in pre-operative analgesics, than that of the standard extraction procedure wherein the amount of pain is moderate to severe in nature. The level of anxiety and peri-operative pain during the procedure is also much reduced in prescribing analgesics prior to the treatment. 67% of respondents have revealed that peri-operative pain is controlled to the maximum with analgesics before the procedure and they are also able to well differentiate between pain and pressure during the time of extraction, while those who underwent a standard extraction procedure experienced pain which could not be well differentiated from the pressure felt. Several studies have been conducted on the same field of interest, Ong et al combined 66 studies (total n=3,261) and stratified them according to type of analgesic intervention and outcome measures. The authors found the most robust analgesic effect for pain control was with epidural analgesia, followed by non-steroidal anti-inflammatory drugs and local anaesthetic wound infiltration(5). In similarity to our study, Dahl et al compared pain scores and analgesic requirements, and reported no significant decrease in pain scores or analgesic requirements if analgesic intervention was given preoperatively versus postoperatively(6). From the study it is also clear from the patients who were

given pre-operative analgesics that, their present experience of extraction is comfortable than the previous extraction procedure, and the overall feedback of the extraction procedure was also graded as good(70%) among people who were administered analgesic prior to the treatment.

CONCLUSION

Each patient is unique in his or her perception of pain allowing for many combinations in the treatment of pain. In general practice, multimodal pain management therapy should be used whenever possible. Unless contraindicated, patients should receive a proper regimen of NSAIDS. The study suggests that people more commonly use NSAID's such as paracetamol and ibuprofen, which are available OTC. But surgeons should make sure that the patients are treated with proper pain control protocols and measures such that quality and comfortness of the treatment is increased. This study is conducted with a small sample size, but further studies are needed in future to analyze and justify the results.

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