



## A prospective and comparative study of analgesic drug in the treatment of cancer pain

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### ABSTRACT

The aim of our study was to compare the appropriate selection of analgesic drugs in the cancer pain. In a prospective study spent 8 months (January to August 2013), we analyzed the prescription data of 100 patients of cancer with pain. We retrieved prescription data from patient profile forms and documented essential data in a Patient Profile Form, designed for our study. Out of 100 cases 67% were male and 33% were female. Out of these 100 prescriptions analyzed, 89% patients were prescribed with opioid and 11% non-opioid analgesics. Therefore opioids were the commonly prescribed drug for the cancer pain treatment, followed by non-opioids. In this study, the minor and major side effects of opioid drugs were 85% and 15% respectively.

**Key words:** Analgesic drugs, Cancer pain, Pain management.

### INTRODUCTION

Pain management is a branch of medicine focused on reducing pain and improving quality of life through an integrative approach to care. Pain management is particularly important for cancer patients, considering one in three patients continue to experience pain after treatment. Those with advanced cancer are most likely to have severe pain. The good news, according to the National Cancer Institute, is that up to 90 percent of cancer patients get relief from relatively simple pain management therapies.

Cancer pain can result from the cancer itself. Cancer can cause pain by growing into or destroying tissue near the cancer. Cancer pain can come from the primary cancer itself — where the cancer started — or from other areas in the body where the cancer has spread (metastases). As a tumour grows, it may put pressure on nerves, bones or organs, causing pain.

Cancer pain may not just be from the physical effect of the cancer on a region of the body, but also due to chemicals that the cancer may secrete in the region of the tumour. Treatment of the cancer can help the pain in these situations.

Cancer treatments such as chemotherapy, radiation and surgery are another potential source of cancer pain. Surgery can be painful, and it may take time to recover. Radiation may leave behind a burning sensation or painful scars. And chemotherapy can cause many potentially painful side effects, including mouth sores, diarrhoea and nerve damage.

Cancer pain is often very complex, but the most intractable pain is often neuropathic in origin, arising from tumour invasion of the meninges, spinal cord and dura, nerve roots, plexuses and peripheral nerves.

Accurate diagnosis of the causes of pain is necessary with the use of multimodal therapies.

The number of cancer patients is increasing day by day. The majority of these patients are incurable at the time their disease is diagnosed. Cancer patient need pain relief at all stages in order to improve their quality of life and functional ability. There are mainly two primary types of analgesic: narcotics (opioids like codeine and morphine) and non-narcotics (non-opioids like aspirin-like medications and others). The mechanism of action of opioids differs from non-opioids. On working on special pain receptors in the nervous system, the opioid drugs reduce pain whereas non-opioid works directly on injured body tissue. The opioid drugs decrease the brain awareness of the pain, whereas the non-opioid alters the chemical changes in injured or damaged body tissues. Therapies such as meditation, massage, acupuncture and yoga may help. Managing pain can improve sleep, energy levels and quality of life. Radiation, surgery, hormone therapy and chemotherapy may also relieve pain.

## METHODOLOGY

### Study Site

This study was conducted in HCG Hospital, Erode. It is a 100-bedded Tertiary Care Hospital, providing specialized services to cancer patients in and around Erode, Salem and also the rural population of Tamil Nadu.

### Study Design

This was a hospital based prospective observational study conducted on in-patients to review the current prescribing pattern of analgesic drugs and their drug interactions in cancer patients.

### Sample Size

A total of 100 cases were collected from oncology department, and the data were collected in a well designed format.

### Study period

The prospective study was conducted for a period of 8 months from January to August 2013.

### Study criteria

**Inclusion criteria:** Cancer patients of both gender and all age groups ranging from 28-55 years, who are prescribed an analgesic drug, were included in this study.

**Exclusion criteria:** Patients with other pain problems like cardiac, neurology, myocardial infarction, accidental cases are excluded.

### 3) Source of Data

Data was collected using a well-designed patient data collection form and also a systemic review on various journals and articles

### (a) By reviewing the patient's treatment chart, case sheets of the patients:

#### Preparation of data collection form

Information extracted from the case files will include: Demographic data, chief complaint, if he/she is a known case of specific cancer and etiology of pain, habits (smoker/alcoholic/food habits), past medical history and past medication history, family history, laboratory details, diagnosis. Carrying out a full assessment, which includes: history- from the patient and determine: Number and site of pain, intensity/severity of pain, radiation of pain, duration of pain. Quality of pain, aggravating / relieving factors / sensory disturbances / associated power loss, analgesic drug history including dose and route of administration, Impact of psychological factors e.g. anxiety or depression and effect on activities of daily living.

#### Prescribing indicators include

- 1) Most commonly prescribed analgesic in this study.
- 2) Monitoring ADR for analgesic in the prescription.

#### Patient indicators include

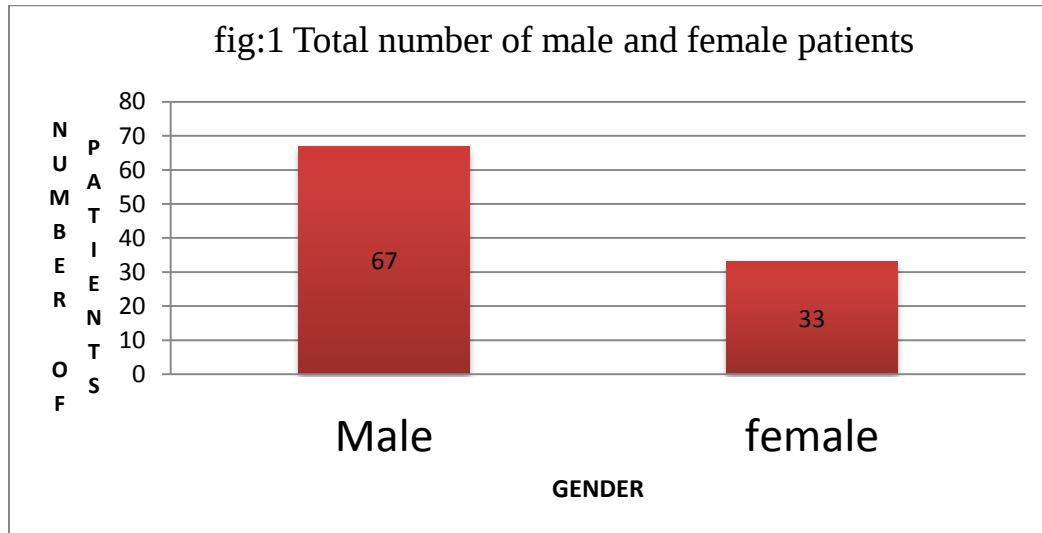
- 1) Total number of male and female patients.
- 2) Average age of male and female patients.
- 3) Number of patients receiving opioid and non-opioid drug.
- 4) Number of patients receiving various opioid drugs.
- 5) Percentage of patients with minor and major side effects.

## RESULTS

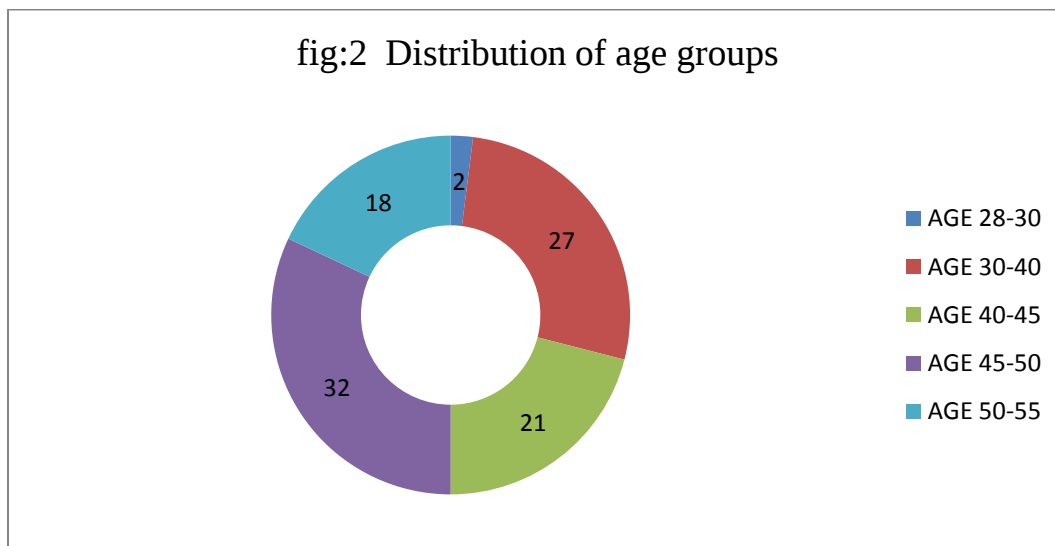
A total of 100 cancer pain patients were included. The incidence of cancer pain was found to be higher in male than in females and also the incidence of cancer pain increases in age. In our findings we observed that opioids were the most frequently prescribed drug followed by non-opioids. Opioid

analgesics were widely prescribed. The data are analyzed with Graphpad Prism by Anova followed by Dunn's Multiple Comparison Test, the values with different superscript differs from each other at  $p < 0.05$ .

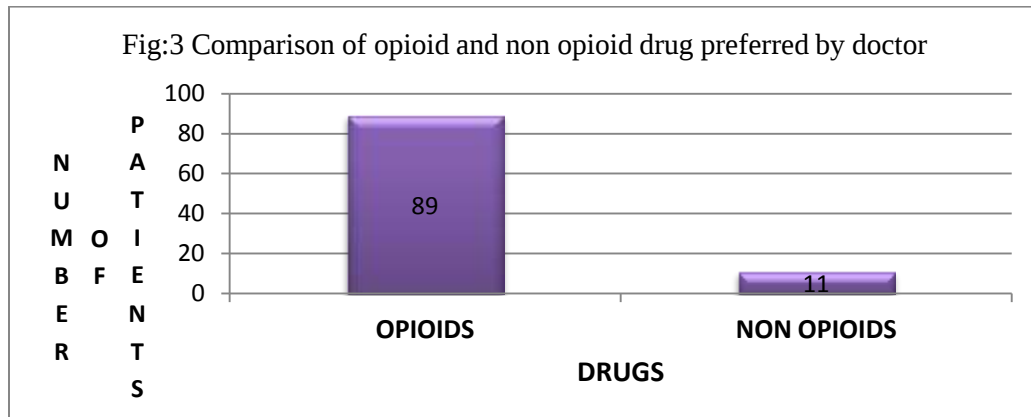
**Total number of male and female patients**



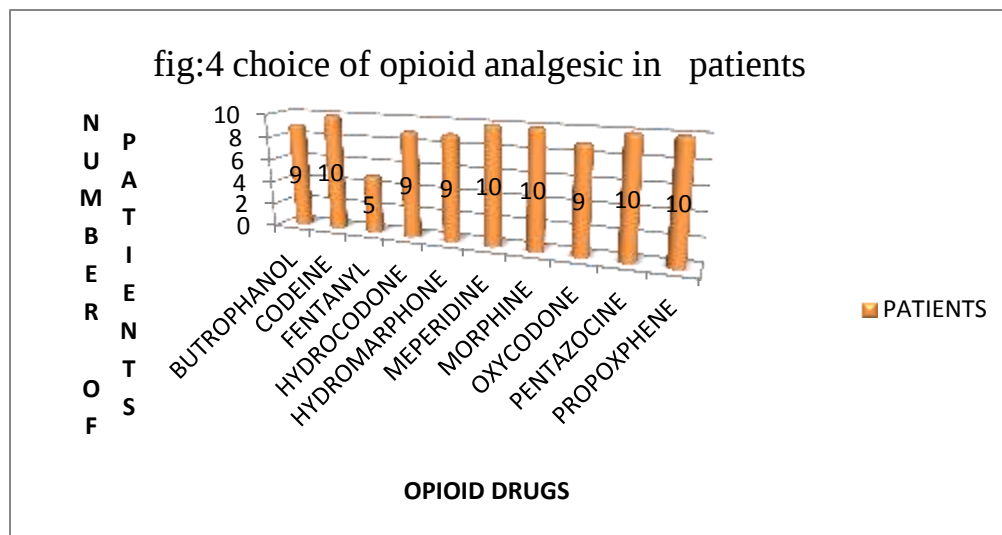
**Distribution of age groups**



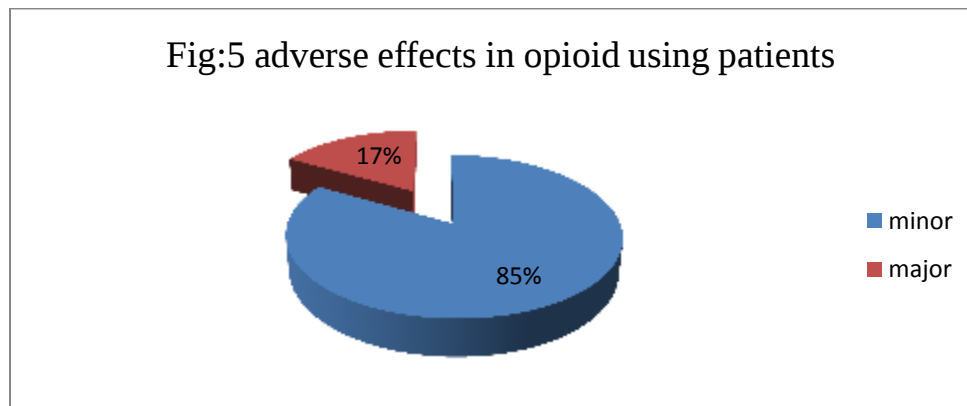
### Comparison of opioid and non-opioid drug preferred by doctor



### Choice of opioid analgesic in patients



### Adverse effects in opioid using patients



## CONCLUSION

Opioids are stronger analgesic than non-opioids. Non opioid are effective only milder to moderate pain whereas opioid are useful more in severe pain. The

above studies justified the use of opioids because it was the effective, very less incidences of adverse drug reactions (ADR) and also the cost was less expensive.

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