



## A PROSPECTIVE OBSERVATIONAL STUDY ON PAIN MANAGEMENT IN CANCER PATIENTS AND TELEPHONIC ASSESSMENT OF NAUSEA AND VOMITING

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### ABSTRACT

**Background:** Chemotherapy of cancer has many side effects. Nausea and Vomiting happen to be one of the most common side effects of chemotherapy in cancer patients. One of the most common symptoms seen in cancer patients is pain. It may limit the efficacy of work in daily life activities of the patient. Pain is defined as a highly unpleasant physical sensation caused by "illness or injury". Nausea is the sensation of being about to vomit. Vomiting or emesis is the expelling of undigested food through the mouth.

**Aim:** The aim of this study is to evaluate the pain management in cancer patients and telephonic assessment of nausea and vomiting.

**Methodology:** This study was conducted with the objective to assess the pain, to evaluate the management of pain in cancer patients, to evaluate the incidence of nausea and vomiting through questionnaires via Telephone, in Care hospitals, Hi- Tech city, Hyderabad. This study is observational in nature and the subjects enrolled under this study were about 116. Informed consent was obtained from all the subjects. Subjects recruited in this study were admitted as in patients in the hospital to receive chemotherapy. The assessment of pain is done by using Visual analogue scale.

**Results:** In this study, a total of 116 subjects with cancer were evaluated. Out of 116 subjects 109 subjects (93.9%) had mild pain and 07(6.03%) subjects were having moderate pain. For 69 subjects (59.4%) Tramadol was given, for 41 subjects (35.3%) Tab. Ultracet was given and for 06 subjects (5.17%) Morphine was given. 12 subjects (10.3%) had nausea, 5 subjects (4.31%) had vomiting, 3 subjects (2.5%) had both nausea and vomiting. Whereas 96 subjects (82.7%) had no incidence of nausea and vomiting. In most of the subjects there was no incidence of Nausea and Vomiting, as they were administered with Pre-medications during chemotherapy cycle and during discharge, 74 subjects (63.06) were prescribed with Tab. Zofir, 42 subjects (36.2%) were prescribed with Tab. Domstal.

**Conclusion:** A total of 116 patients were observed who are undergoing chemotherapy. Among them mild pain is dominant with 109(93.9%) subjects, 59.4% of subjects were receiving Tramadol for pain management. Absence of nausea and vomiting is prominent with 96 subjects (82.75) as they were administered with pre medications during chemotherapy as prophylaxis for nausea and vomiting. Zofir is prominent as it is prescribed as discharge medication after chemotherapy with 72(62.75%) subjects. Out of which, 109(93.95) subjects are independent of others to perform their daily activities.

**Key Words:** Cancer, Tumors, Pain, Nausea and Vomiting.

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### INTRODUCTION:

Human body is made up of trillions of cells. Cancer can start anywhere in these cells. These cells start to divide uncontrollably and even spread to other cells. Sometimes these affected cells can move to far places through blood or lymph and form new tumor<sup>1</sup>. The main two types of cancers are malignant tumors and benign tumors. In Malignant tumors, the infected cells enter and destroy the organs and healthy tissues present around it. They may or may not be cancerous. The Benign tumors are located at a particular place in the body. They do not have the ability to spread in the body. Uncontrollable growth is not seen in this tumor. They also do not enter into other cells.

Generally cancers are named based on the site of origins. E.g., Prostate cancers originate in prostate, Bone cancers originate in bone. Based on this, over 200 different types of cancers are identified<sup>2</sup> Based on the survey conducted in 2018, about 17

million new cases of cancers have been identified worldwide. About 9.6 million deaths have been identified worldwide in the survey. Around 33% of cancer cases were linked to exposure to tobacco and smoke worldwide. Some types of cancers such as Lung, Liver, Stomach, and Bowel are the most common causes of death worldwide since 1975<sup>3</sup>. By 2030, the number of new cancer cases per year is expected to rise to 23.6 million<sup>4</sup>. The most commonly diagnosed cancers in both the sexes is Lung cancer(11.5%) of the total cases and about 18.4% of total cancer deaths are due to Lung cancers.

Carcinogen is a substance that can cause cancer and this process is known as carcinogenesis.<sup>(5)</sup> Mostly it is known to be caused due to mutations in the DNA present in the cells.<sup>(6)</sup> Other causes of cancers include., Mutations in the gene, Physical activity, Diet, Exposure to harmful rays due to radiation or sun, Idiopathic causes<sup>2</sup>. Depending on the part of

the body affected, the signs and symptoms of cancer vary. Mostly they appear in the form of weight loss or tiredness for more than few weeks<sup>2</sup>. General signs and symptoms include: Fatigue, Appearance of a lump that can be felt, Unexplained weight loss or weight gain, Bowel or bladder habit changes, Difficulty in swallowing, Sudden onset of fever or night sweats, Trouble in breathing, Hoarseness, Changes in appearance of skin such as darkening, yellowing or redness of skin, Discomfort after eating or indigestion<sup>6</sup>. Different types of cancers have different type of treatments. Various types of treatments include: Surgery, Radiation therapy, Chemo therapy, Hormone therapy, targeted therapy and Immunotherapy<sup>7,8</sup>.

The International association for the study of pain(1988) has defined pain as "an unpleasant, sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage"<sup>9</sup>. In cancer patients, pain is highly prevalent. Almost all patients with malignant disease experience recurrent episodes of acute pain, which are accompanied by surgery, invasive procedures and complications such as a pathological fracture<sup>10</sup>. Mostly cancer pain is caused due to tumor pressing on the bones, nerves or other organs in the body<sup>11</sup>. The other causes of cancer pain are cancer therapies which include surgery, radiation therapy, chemotherapy, targeted therapy, supportive care therapies and diagnostic procedures<sup>9</sup>. Over 90% of cases, cancer pain can be controlled by using medications alone which include Simple analgesics: eg: Aspirin, Paracetamol, Non-steroidal anti-inflammatory drugs<sup>12</sup>.

Nausea and Vomiting are serious and frequent side effects of cancer therapy<sup>13</sup>. Cancer patients particularly those who undergo the targeted radiation therapy or chemotherapy develop nausea and vomiting as side effects<sup>14</sup>. Nausea is a feeling queasy or sick to your stomach, it's like you are going to throw up. Vomiting is emptying your stomach by throwing up<sup>15</sup>. It may be due to Chemotherapy drugs, Radiation therapy and Cancer which spreads to the brain<sup>16</sup>.

## MATERIALS AND METHODS:

### METHODOLOGY:

**STUDY SITE:** The study has been carried out in the department of Oncology, Care hospitals, Hi Tech city, Hyderabad.

**STUDY DESIGN:** This is a hospital based prospective observational study.

**STUDY PERIOD:** The study was conducted for 6 months (October 2018 to March 2019).

**SAMPLE SIZE:** Patients recruited in the study with cancer were both inpatients and outpatients from the hospital. A total of 116 patients including 49 males and 67 females were taken and that who fulfilled the inclusion criteria.

### STUDY CRITERIA:

#### INCLUSION CRITERIA:

- Patients of age more than 16 years.
- Patients who are fit and undergoing chemotherapy.
- Patients who are willing to give verbal informed consent for study.
- Patients in Medical oncology department suffering from cancer.

### EXCLUSION CRITERIA:

Patients who are less than 16 years are excluded from the study.

- Patients who are not willing to give verbal informed consent for the study.
- Patients who are not cooperative.
- Psychiatric patients.

Data was collected and recorded in specially designed data entry format during regular ward rounds. The clinical records of patients receiving chemotherapy was reviewed for demographic, clinical, diagnostic and laboratory investigations which were extracted and entered into the data collection form. Obtain data included: Age, Gender, Height, Weight, Hb, RBC count, TLC, Laboratory data and treatment patterns including Brand name, Generic name, Dose, Dosage form, Duration, Route of administration of each drug (chemotherapy drugs and discharge medications).

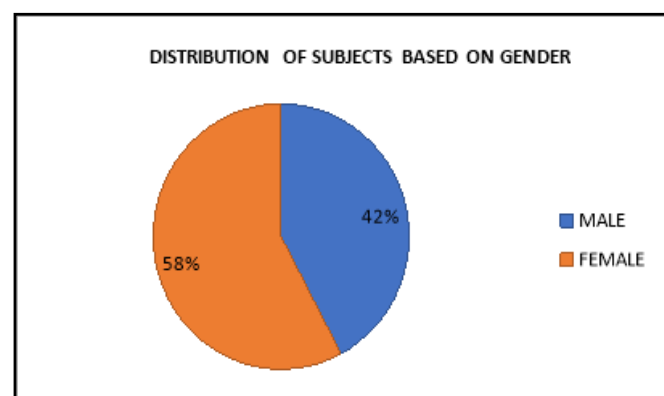
## RESULTS AND DISCUSSION:

### 1. DISTRIBUTION OF SUBJECTS BASED ON GENDER:

In this study, a total of 116 patients who were receiving chemotherapy in oncology day care department were interviewed in the study among whom the majority were female who constituted account of 57.6%(n=67) and males constituted 42.4%(n=49).

**Table 1: Distribution of subjects based on Gender**

GENDER	TOTAL	PERCENTAGE (%)
MALE	49	42.4
FEMALE	67	57.6
TOTAL	116	100



**Fig 1: Distribution of subjects based on Gender**

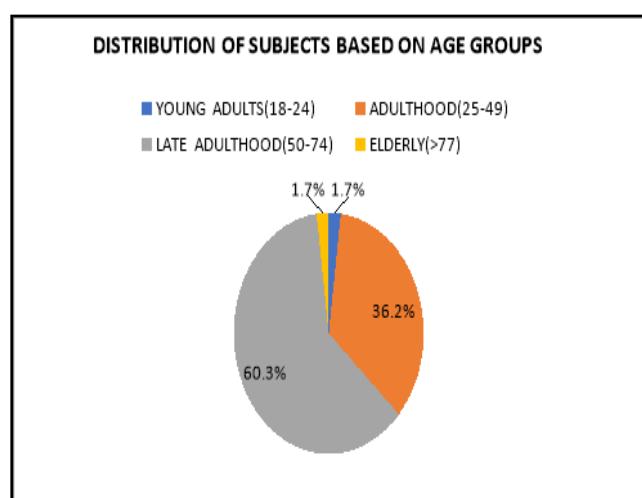
### 2. DISTRIBUTION OF SUBJECTS BASED ON AGE GROUP:

According to the age group analysis, no. of cases in age group of young adults (18-24) were 1.7% (n=2), adulthood (25-49) age group were 36.2% (n=42) population, late adulthood (50-74)

age group were 60.3% (n=70), elderly (>77) age group were 1.7 (n=20) patients identified. This data reveals that the patients of late adulthood (50-74) were found to be highly effected with cancer followed by adulthood (25-49) age group.

**Table 2: Distribution of subjects based on Age groups**

AGE GROUP	MALE	FEMALE	TOTAL	PERCENTAGE (%)
YOUNG ADULTS(18-24)	01	01	02	1.7
ADULTHOOD (25-49)	17	25	42	36.2
LATE ADULTHOOD (50-74)	30	40	70	60.3
ELDERLY(>77)	01	01	02	1.7
TOTAL	49	67	116	100



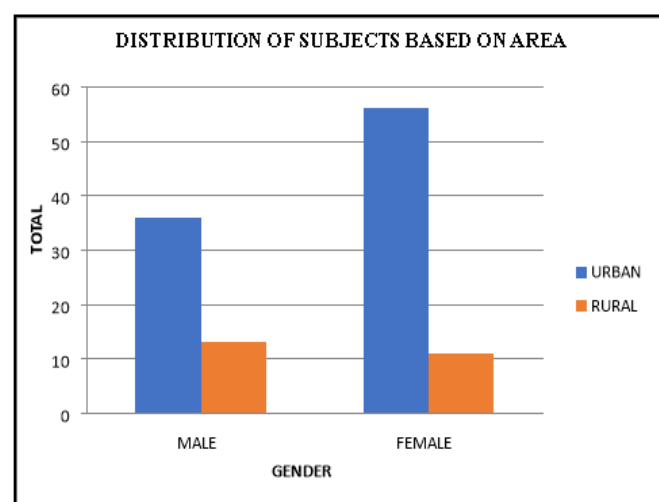
**Fig 2: Distribution of subjects based on Age groups**

### 3. DISTRIBUTION OF SUBJECTS BASED ON AREA:

Among 116 patients, 79.3% (n=92) subjects were living in urban areas whereas 20.7% (n=24) subjects were living in rural areas.

**Table 3: Distribution of subjects based on Area**

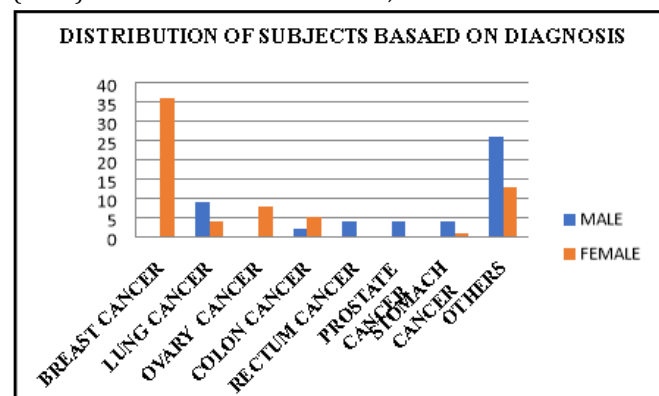
AREA	MALE	FEMALE	TOTAL	PERCENTAG (%)
URBAN	36	56	92	79.3
RURAL	13	11	24	20.7
TOTAL	49	67	116	100



**Fig 3: Distribution of subjects based on Area**

### 4. DISTRIBUTION OF SUBJECTS BASED ON DIAGNOSIS:

In demographic profile, among 116 patients majority of the patients were having Breast cancer with 31.03% (n=36) followed by Lung cancer with 11.2% (n=13), Ovary cancer with 6.89% (n=8), Colon cancer with 6.03% (n=7), Stomach cancer with 4.31% (n=5), Rectum cancer with 3.4% (n=4), Prostate cancer with 3.4% (n=4) and others constitute about 33.65 (n=39) which include Uterine cancer, Endometrial cancer etc.



**Table 4: Distribution of subjects based on Diagnosis**

Table 4: Distribution of subjects based on Diagnosis

DIAGNOSIS	MALE	FEMALE	TOTAL	PERCENTAGE (%)
BREAST CANCER	-	36	36	31.03
LUNG CANCER	09	04	13	11.2
OVARY CANCER	-	08	08	6.89
COLON CANCER	02	05	07	6.03
RECTUM CANCER	04	-	04	3.4
PROSTATE CANCER	04	-	04	3.4
STOMACH CANCER	04	01	05	4.31
OTHERS	26	13	39	33.6
<b>TOTAL</b>	<b>49</b>	<b>67</b>	<b>116</b>	<b>100</b>

## 5. DISTRIBUTION OF SUBJECTS BASED ON TYPE OF CANCER:

According to the type of cancer among 116 patients, subjects with Carcinoma were found to be high with 83.6% (n=97), followed by Lymphoma with 8.7% (n=10), Leukaemia with 4.3% (n=5) and Sarcoma with 3.4% (n=4).

Table 5: Distribution of subjects based on type of cancer

TYPE OF CANCER	MAL E	FEMALE	TOTAL	PERCENTAGE (%)
CARCINOMA	34	63	97	83.6
SARCOMA	03	01	04	3.4
LEUKEMIA	05	0	05	4.3
LYMPHOMA	07	03	10	8.7
<b>TOTAL</b>	<b>49</b>	<b>67</b>	<b>116</b>	<b>100</b>

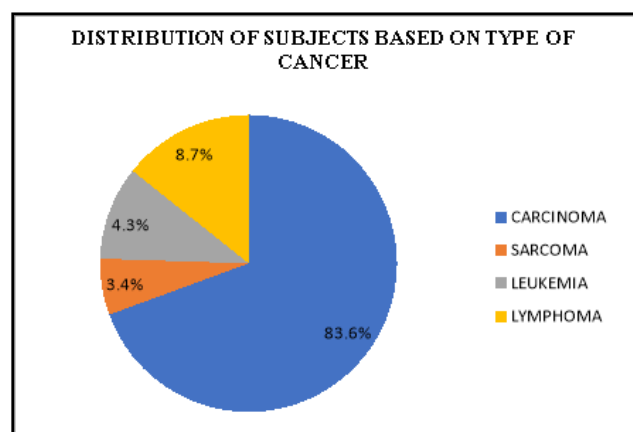


Fig 5: Distribution of subjects based on type of cancer

## 6. DISTRIBUTION OF SUBJECTS BASED ON PAIN SCORE:

Among 116 subjects, Patients with pain score ranging from 0 to 3 i.e. Mild pain were found to be dominant with 93.9% (n=109), pain score ranging from 4 to 7 i.e. Moderate pain were found to be 6.03% (n=7). There are no patients with severe pain.

Table 6: Distribution of subjects based on Pain score

PAIN SCORE (0-10)	MALE	FEMALE	TOTAL	PERCENTAGE (%)
MILD (0-3)	47	62	109	93.9
MODERATE (4-7)	02	05	07	6.03
SEVERE (8-10)	0	0	0	0
<b>TOTAL</b>	<b>49</b>	<b>67</b>	<b>116</b>	<b>100</b>

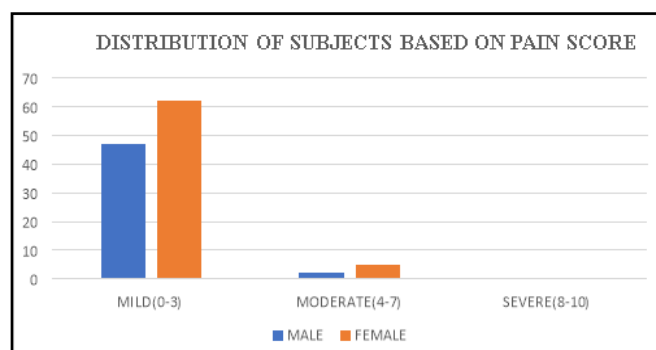


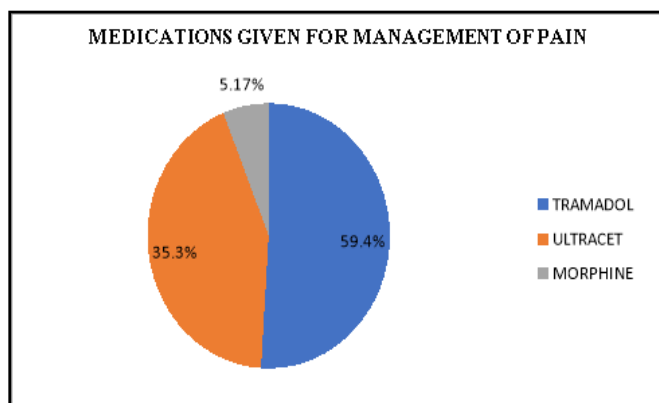
Fig 6: Distribution of subjects based on Pain score

## 7. DISTRIBUTION OF SUBJECTS BASED ON MEDICATIONS GIVEN FOR MANAGEMENT OF PAIN:

Out of 116 subjects, majority of subjects were prescribed with TAB. TRAMADOL which constitute 59.4% as given to (n=69), followed by TAB. ULTRACET with 35.3% (n= 41) and INJ.MORPHINE with 5.17% (n=6) population.

**Table 7: Distribution of subjects based on medications given for management of pain**

PERCENTAGE (%)	MEDICATIONS	MALE	FEMALE	TOTAL
59.4	TRAMADOL	25	44	69
35.3	ULTRACET	21	20	41
5.17	MORPHINE	03	03	06
100	TOTAL	49	67	116



**Table 7: Distribution of subjects based on medications given for management of pain**

## 8. DISTRIBUTION OF SUBJECTS BASED ON INCIDENCE OF NAUSEA AND VOMITING:

Among 116 subjects, Absence of Nausea and Vomiting was seen in majority of subjects which constitute 82.8% (n=96), whereas 10.3% (n=12) population had incidence of Nausea, 4.3% (n=5) subjects had incidence of Vomiting and 2.6% (n=3) subjects had incidence of both Nausea and Vomiting.

**Table 8: Distribution of subjects based on incidence of nausea and vomiting**

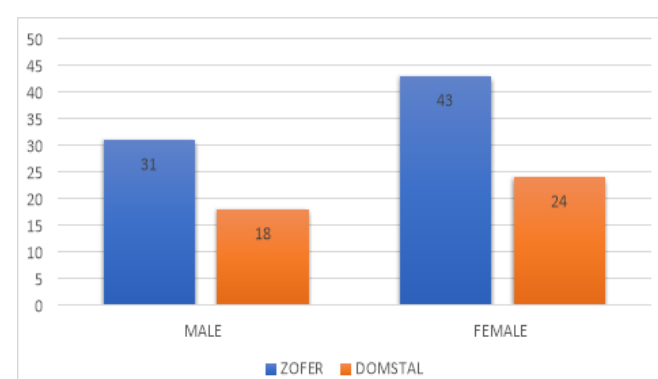
NAUSEA / VOMITING	MALE	FEMALE	TOTAL	PERCENTAGE (%)
NAUSEA	02	10	12	10.3
VOMITING	0	05	05	4.3
NAUSEA AND VOMITING	0	03	03	2.6
ABSENT	47	49	96	82.8
TOTAL	49	67	116	100

## 9. DISTRIBUTION OF SUBJECTS BASED ON MEDICATIONS GIVEN FOR MANAGEMENT OF NAUSEA AND VOMITING:

Out of 116 patients, the subjects who were prescribed with Tab. Zofer are in majority with 63.79% (n=74) compared to the subjects who were prescribed with Tab. Domstal i.e. 36.2% (n=42) during the discharge after receiving chemotherapy.

**Table 9: Distribution of subjects based on medications given for management of nausea and vomiting**

MEDICATIONS	MALE	FEMALE	TOTAL	PERCENTAGE (%)
ZOFER	31	43	74	63.79
DOMSTAL	18	24	42	36.2
TOTAL	49	67	116	100



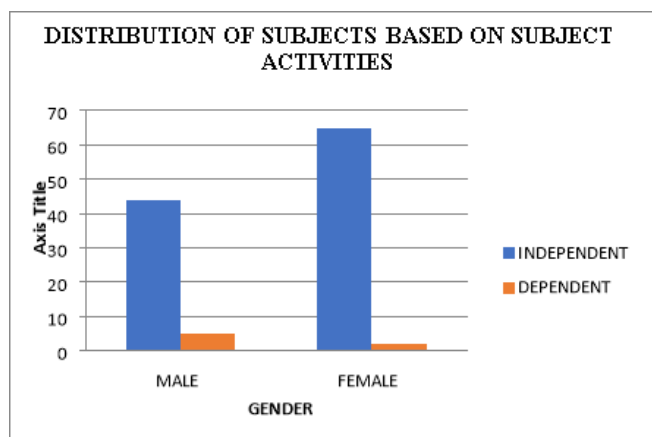
**Fig 9: Distribution of subjects based on medications given for management of nausea and vomiting.**

## 10. DISTRIBUTION OF SUBJECTS BASED ON SUBJECT ACTIVITIES:

Among 116 subjects, majority of subjects were Independent who were able to perform their daily activities on their own, which constitute about 93.9% (n=109) whereas 6.03% (n=7) subjects were dependent on others to perform their daily activities.

**Table 10: Distribution of subjects based on Subject activities**

ACTIVITIES	MALE	FEMALE	TOTAL	PERCENTAGE (%)
INDEPENDENT	44	65	109	93.9
DEPENDENT	05	02	07	6.03
TOTAL	49	67	116	100



**Fig 10: Distribution of subjects based on Subject activities**

## CONCLUSION:

This study accounts to the conclusion that Carcinoma is the most prominent type of cancer. Though males are more prone to cancer, but in this study females are more in number, among which Breast cancer is most common. Pain is one of the most common symptoms in cancer patients and often has a negative impact on patient's functional status and quality of life. In this study, majority of patients have mild pain and is treated with Tab. Tramadol in most of the patients. As patients receiving chemotherapy regularly, severe pain is not seen. This study concludes that cancer pain can be managed or treated with proper treatment. Nausea and Vomiting are serious side effects of chemotherapy. It is important that Nausea and Vomiting are controlled so that the patient can continue treatment and have a better quality of life. In this study absence of Nausea and Vomiting is seen in majority of subjects as they were administered with pre medications during chemotherapy cycle and during discharge subjects were prescribed with Tab. Zofar and Tab. Domstal. This concludes that subjects who were actively receiving chemotherapy were able to perform their daily activities independently without seeking others help.

## ACKNOWLEDGEMENT:

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