

Lung cancer and medicines used In the tumors department in Tobruk Medical center

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Abstracts: Lung cancer, also known as bronchial cancer about 98-99% of all lung cancers is precancerous, is a malignant lung tumour characterized by uncontrolled cell growth in lung tissue, and consists of two main types, small cell lung cancer (SCLC) and Non small cell lung cancer, Non Small (NSCLC). The most common symptoms are coughing (including coughing up blood), weight loss, shortness of breath, and chest pain. The vast majority (85%) of lung cancer cases are caused by long-term tobacco smoking. Lung cancer can be seen on chest radiographs and computerized tomography (CT) scans. The diagnosis is confirmed by biopsy, which is usually performed by Bronchoscopy or computed tomography guidance. Medications used in the treatment of lung cancer in the Department of Oncology, Tobruk, and their prevalence rate in the city were limited. 48 lung cancer patients were registered in the city's oncology department, including 6 women and 42 men, and statistics were collected from 2018 to 2020. Among the 48 lung cancer patients, 19 of them were from outside Tobruk and 29 from Tobruk, and their age groups ranged between 40 and 85 years, and we find that the largest number of patients are those over 60 years old, and this agrees with several studies precedent.

The drugs used for treatment were: CISPLATIN (9%), PEMETREXED (12%), TAXOTARE (3%), KEYTRUDA (4%), AVASTIN (9%), GEMZAR (14%), PACLITAXEL (13%)

Keywords: Lung, cancer, carcinomas, Drug, Bronchial

Introduction:

Lung cancer, also known as bronchial carcinoma(1) since about 98–99% of all lung cancers are carcinomas, is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung.(2) Lung carcinomas derive from transformed, malignant cells that originate as epithelial cells, or from tissues composed of epithelial cells. Other lung cancers, such as the rare sarcomas of the lung, are generated by the malignant transformation of connective tissues (i.e. nerve, fat, muscle, bone), which arise from mesenchymal cells. Lymphomas and melanomas (from lymphoid and melanocyte cell lineages) can also rarely result in lung cancer.

In time, this uncontrolled growth can spread beyond the lung – either by direct extension, by entering the lymphatic circulation, or via the hematogenous, bloodborne spread – the process called metastasis – into nearby tissue or other, more distant parts of the body.(3) Most cancers that start in the lung, known as primary lung cancers, are carcinomas. The two main types are small-cell lung carcinoma (SCLC) and non-small-cell lung carcinoma (NSCLC).(4) The most common symptoms are coughing (including coughing up blood), weight loss, shortness of breath, and chest pains.(5)

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The vast majority (85%) of cases of lung cancer are due to long-term tobacco smoking. About 10–15% of cases occur in people who have never smoked.(6) These cases are often caused by a combination of genetic factors and exposure to radon gas, asbestos, second-hand smoke, or other forms of air pollution.(4)(5)(13)(14)Lung cancer may be seen on chest radiographs and computed tomography (CT) scans. (7)The diagnosis is confirmed by biopsy, which is usually performed by bronchoscopy or CT guidance.(4)(8)

The major method of prevention is the avoidance of risk factors, including smoking and air pollution.(9) Treatment and long-term outcomes depend on the type of cancer, the stage (degree of spread), and the person's overall health.(7) Most cases are not curable.(3) Common treatments include surgery, chemotherapy, and radiotherapy.(7) NSCLC is sometimes treated with surgery, whereas SCLC usually responds better to chemotherapy and radiotherapy.(10)

Worldwide in 2020, lung cancer occurred in 2.2 million people and resulted in 1.8 million deaths. It is the most common cause of cancer-related death in men and second-most common in women after breast cancer.(3)The most common age at diagnosis is 70 years.(4) In the United States, the five year is 20.5%, while in Japan it is 41.4%. Outcomes typically are worse in the developing world.(13)



A chest X-ray showing a tumor in the lung (marked by arrow)

Key facts

Cancer is the second leading cause of death globally, and is responsible for about 10 million deaths per year. Globally, about 1 in 6 deaths is due to cancer. (13)

Approximately 70% of deaths from cancer occur in low- and middle-income countries.

Around one-third of deaths from cancer are due to tobacco use, high body mass index, alcohol use, low fruit and vegetable intake, and lack of physical activity.

Tobacco use is the most important risk factor for cancer and is responsible for approximately 25% of cancer deaths (2).

Cancer-causing infections, such as hepatitis and human papillomavirus (HPV), are responsible for approximately 30% of cancer cases in low- and lower-middle-income countries (14).

Late-stage presentation and lack of access to diagnosis and treatment are common, particularly in low- and middle-income countries... Comprehensive treatment is reportedly available in more than 90% of high-income countries but less than 15% of low-income countries. (15)

The economic impact of cancer is significant and increasing. The total annual economic cost of cancer in 2010 was estimated at US\$ 1.16 trillion (16).

Only 1 in 3 countries reported high-quality cancer incidence data in 2019 (17).

The main objective of this work:

1. To Clarify the drugs used in the treatment of lung cancer in Tobruk.
2. knowledge of the prevalence rate of lung cancer in Tobruk.

Materials and Methods:

1. Intravenous medications must be given by an intravenous (IV) injection or infusion. This means they are sent directly into your vein using a needle or tube the term “intravenous” means “into the vein.” With IV administration, a thin plastic tube called an IV catheter is inserted into your vein.

Intravenous injection givena:

- a) Bolus - large dose dissolved in vehicle-injected slowly eg . Heparin.
- b) Slow injection - over 15-20 mins e.g. Aminophylline .
- c) Slow Infusion - for constant plasma conc . About 1 litre so in Infused for about 3-4 hrs depending on drug and patient conditions.

A. Advantages:-

1. Immediate action (useful in emergencies) .
2. 100 % bioavailability.
3. Large volumes can be given.
4. Irritants can be given.
5. Rapid adjustments are possible.

B. Disadvantages:

Irritation of veins causes thrombophlebitis.

1. Extravasations of drugs can cause irritate
2. Only an aqueous solution can be given IV.

2.Normal saline: is a mixture of salt and water. It is called normal because its salt concentration is similar to tears, blood and other body fluids (0.9% saline). It is also called isotonic solution. Normal saline is soothing and will not burn or sting when applied.

A.Disadvantages:-

1. CII- overload
2. Hyper chloremic metabolic acidosis

B. Advantages:-

1. Hypo natremia
2. Hypo chloremia

3. A cannula is a thin tube that doctors insert into a person’s body cavity, such as their nose, or into a vein. Doctors use them to drain fluid, administer medication, or provide oxygen.

A cannula, pronounced “CAN-you-la,” is a thin tube that doctors insert into a vein or cavity in the body.

There are two main types of cannula:

IV cannulas: IV cannulas consist of short, flexible tubing doctors place into a vein.

Nasal cannulas: Nasal cannulas consist of flexible tubing that sits inside the nostrils and delivers oxygen.

Name Of Drugs:-

1. I.vondansetron
2. I.vdexamethazone
3. I.v Phenergan
4. I.vpoclitaxel
5. I.v carbonation
6. I.v Zantac
7. I.v GEMZAR
8. I.V MANNITOL
9. I.V CISPLATIN
10. I.V LASIX
11. N/S
12. I.vzometa
13. I.V PEMETREXED
14. I.V INFUSTIN
15. PO. PARACETAMOL
16. I.V CHLORPHINAMINE
17. I.V KEYTRUDA
18. I.V ETOPOSIDE
19. I.V OMEPRAZOLE
20. I.V AVASTIN
21. I.V TAXOTARE
22. I.V NAVELBINE

Results:

This study was done in Tobruk medical center in Tobruk Medical Center in oncology department from 2018 – 2020 .

There are patients who were receiving medical cases and doses of chemotherapy 6 female (12.5%) and 42 male (87.5%).

There is (18) patient from Tobruk while (19) from outside of Tobruk.

Age groups of patients with Lung cancer in the oncology Department in Tobruk city are classified as age groups less Than (30years) Their number is age groups from 30 to60 Their number 20 people (41.67) and age groups over 60 years old Their number is 28 people (58.33).

Also many drugs were used carboplatin was more than others represent (32%) and TaxotarLess than others represent (3%) .

Table (1) Drugs Which Used As Chemotherapy In Oncology Department:

A.	I.V Etoposide.	B.	Cisplatin
C.	Paclitaxel	D.	Carboplatin
E.	Aastin	F.	Gemzar
G.	Taxotare	H.	Pemetrexed
I.	Keytruda		

Table 2 : Frequency Of Each Drug Used

Drug	Frequency	Percentage
I.V keytruda.	3	4%
I.V Pemetrexed	9	12%
I.V Taxotar	2	3%
I.V Etoposide	3	4%
I.V Cisplatin	7	9%
I.V Paclitaxel	10	13%
I.V Carboplatin	25	32%
I.V Avastin	7	9%
I.V Gemzar	11	14%

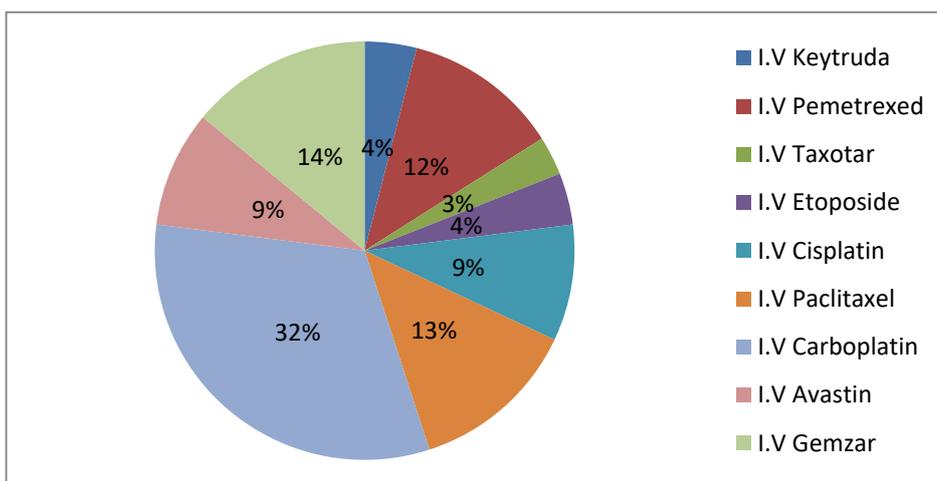


Figure (1) Frequency Of Each Drug Used

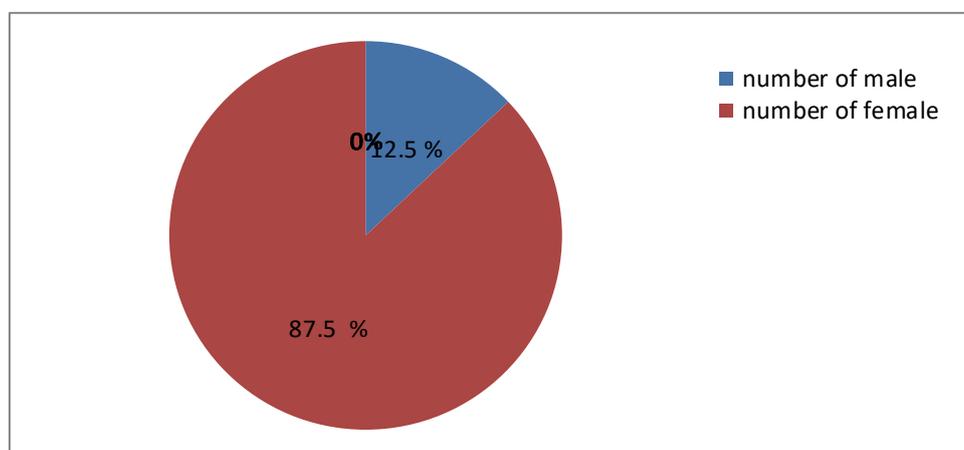
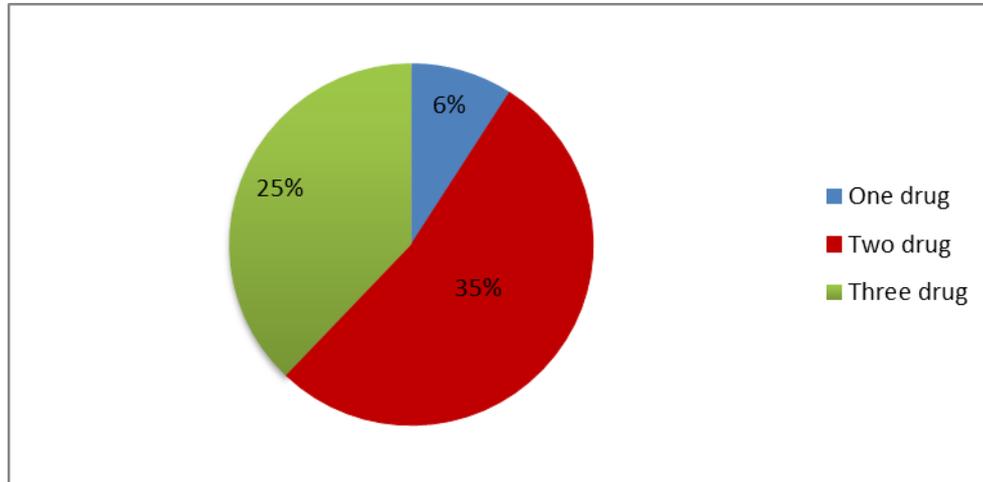


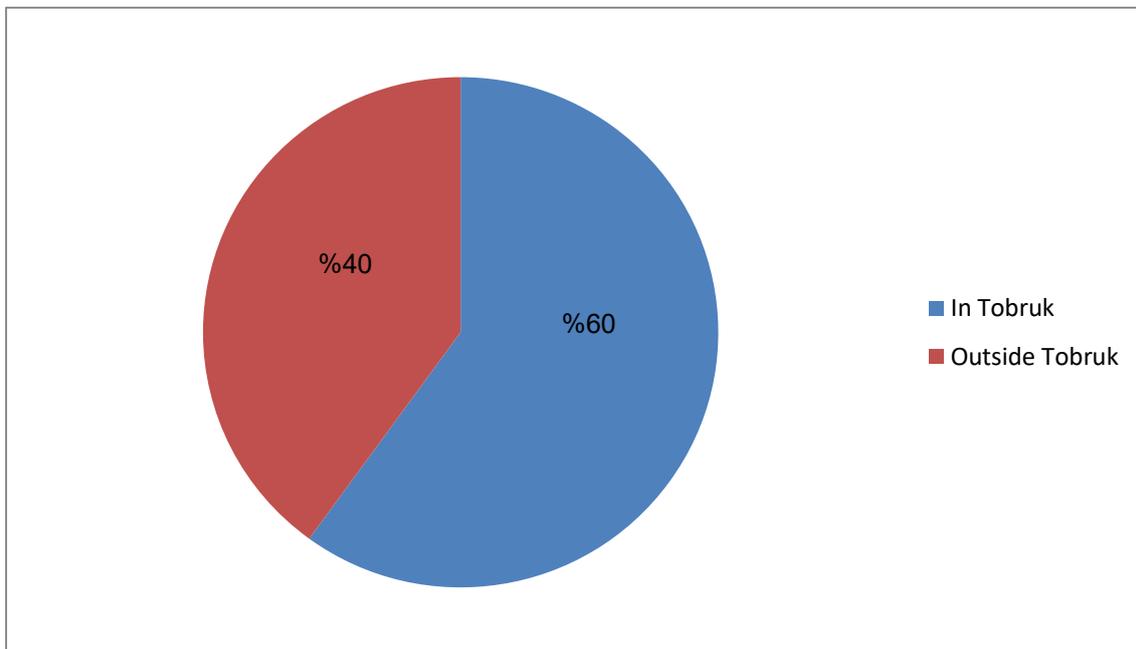
Figure (2) : Number of male and female

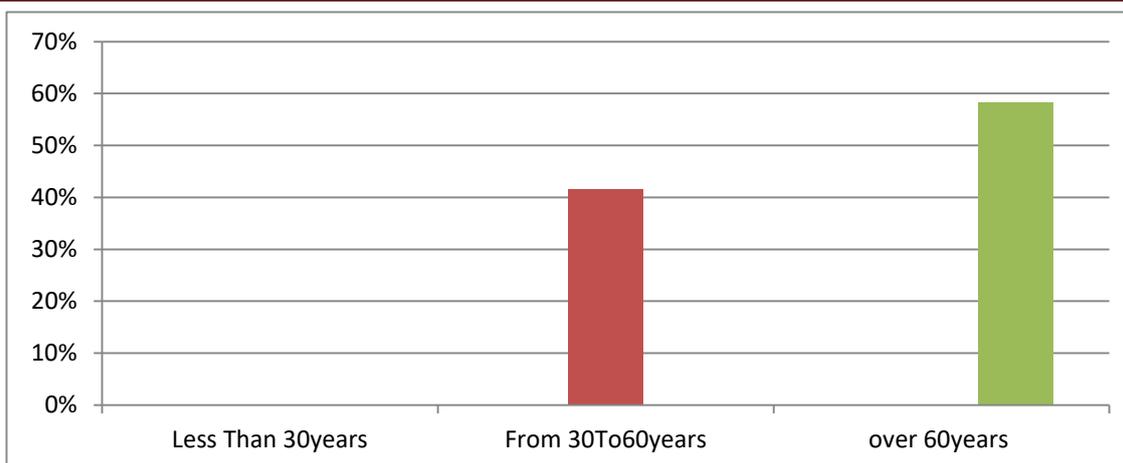
Table3: Number of Drugs Used For Patient

	One drug	Two drug	Three drug
Number	3	17	12
Percentage	6%	35%	25%

**Figure (3) Number of Drugs Used For Patient****Table4: Number Of Patient From Tobruk And From Outside Of Tobruk**

	In Tobruk	Outside Tobruk
Number	29	19
Percentage	60%	40%

**Figure (4) Age groups of patients**



Discussion:

In table (1) Drug, which used in Oncology Department as follows ETOPOSIDE, CISPLATIN, CARBOPLATIN chemotherapy, PACLITAXEL, AVASTIN, GEMZAR, TAXOTARE, PEMETREXED, KEYTRUDA.

Our study agrees with Jan p van Meer beck Dean A Fennell, Dirk KM De Rusher STUDY in The Combination chemotherapy, generally platinum-based plus topside or irinotecan is the mainstay first-line treatment for metastatic small-cell lung cancer.

In Table (2) there are nine drugs used, CARBOPLATIN was more Frequent (32%), While TAXOTARE Was a Lower frequency it was just (3%).

Charts (1) also our study Clarify the patients received chemotherapy were 42 male (87, 5%) While 6 female (12.5%). Our study agrees with Robert's study on old-aged men more than others. In Table (3) The number of drugs used for patients, patient received one drug was 3. (6%), While the number of patients who received Two drugs was 17. (35%), also patients who received three drugs were 12.(25%). Our study agrees with Cosaert and E Quoix 2002study in that Cisplatin and Carboplatin have been successfully used with other drugs in a wide variety of well-established two-drug combinations while three-drug combinations are still under investigation . Table (4) Clarify the Number of patients from Tobruk city and from outside of Tobruk city , patients from Tobruk was 29 (60%), While from outside Tobruk were 19(40%).

In figure (1) age groups for lung cancer patients in the department of Oncology Tobruk, The number of registered patients less Than 30 years old was zero, while The number of registered patients aged from 30 to 60 years was 20 (41.67%), also The number of registered patients over 60 years of age were 28 (58.33%).

Our study agrees with Jan P Van Meerbeeck, Dean A Fennell, Dirk KM De Ruyscher study Typical patients are men older than 70 years ears who are current or past heavy smokers and who have pulmonary and cardiovascular comorbidities.

Conclusion:

Lung cancer is the leading cause of death in the world and the only chance of cure for patients affected By this kind of cancer is surgical resection.

This is mainly because several factors are involved in lung cancer development and progression and to date the diagnostic methods available for an early and efficient detection are not sufficient.

Although lung cancer research data have accumulated dramatically during the past several years, there is no database specifically focusing on lung cancer molecular biology available yet.

Recommendations:

Therapeutic substance therapy and therapeutic drug therapies. Nutrition means eating all the nutrients in a balanced way.

Daily nutrition should have nutrients from the following five main groups:

1. Vegetables and fruits.
2. Meat, chicken, fish, eggs.
3. Grains .
4. Milk and dairy.
5. Liquids (water, fruit juices, tea, meat broth, soup).

Eating healthy food and making very appropriate choices is important in all stages of cancer treatment, as its importance appears mainly in three axes:

1. Maintaining body and muscle tissue moisture, and combating dehydration.
2. Strengthening the immune system and combating some of the side effects that the patient may face during treatment, such as fatigue and general weakness.
3. Obtaining calories, energy, and essential nutrients, and combating malnutrition.

Cancer patients are advised not to use herbal medicines and to reduce proteins and sugars.

When giving a dose of chemotherapy to the patient, the most common side effects are nausea, vomiting, hair loss and fatigue, so some medications are given according to each patient's condition.

These categories are assigned:

Medicines to increase immunity :Antipyretics –Antiemetics- Antidiarrheal.

Some medicines are:Zofran -Dexamethasone - Phenergan - Atropine- Hydrocortisone-Paracetamolg.

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