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INCP procedures in a patient with lung cancer

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Abstract

Lung cancer is the most common malignant tumour in Poland and the first cause of death among oncological diseases. This article presents the main factors causing lung cancer, the course of the disease and health consequences. The most important nursing problems have been identified, taking into account the individual nursing plan. Nursing actions were proposed to adapt the patient to the new situation, to improve his physical and psychological condition and to educate the patient and his family.

Keywords: small cell lung cancer, chemotherapy, problems, care.

Introduction

Lung cancer is the most common type of malignant tumour and is the first cause of cancer-related deaths in both sexes. Each year, many patients are diagnosed with cancer, of which up to 20% (in men) and 10% (in women) are lung cancers [1]. The risk of lung cancer increases with age and the most common patients are those over 65 years of age [2]. The aetiology of lung cancer is the occurrence of multiple mutations, within genes that are responsible for controlling normal cell growth and function. Changes in the DNA sequence of a cell can lead to the formation of oncogenes - the genes responsible for tumour growth in the body.

The risk factors for lung cancer are many, but the main cause is tobacco smoke, which contains about 4,000 toxic substances, most of which are carcinogenic. 90% of people with lung cancer are people who are, or have been, smokers in the past [3]. Other factors that contribute to lung cancer are marijuana smoking, exposure to harmful substances i.e. radon, asbestos, as well as air pollution and diesel exhaust.

Lung cancer in its early stages rarely causes pathological symptoms [4]. However, when tumour growth occurs it can cause characteristic symptoms. It is very common for people with lung cancer to develop a cough, which is the earliest presenting symptom.

Another symptom is increasing dyspnoea, which arises as a result of emphysema and chronic bronchitis, usually caused by cigarette smoke [3].

Dyspnoea can also occur as a result of tumour growth that blocks the lumen of the bronchi, or pleural effusion, where fluid builds up between the pleural membranes causing pressure on the lung. Patients with lung cancer also have haemoptysis, which is coughing up blood or sputum mixed with blood. Recurrent chest infections such as pneumonia, chest pain, fatigue, hoarseness, weight loss unrelated to poor nutrition, or wheezing are also seen. It is sometimes the case that a patient does not have any of the above-mentioned symptoms related to the presence of a tumour in the lungs, but has symptoms from other systems, which are caused by the metastasis of the cancer. Lung cancer usually metastasises to the bones, lymph nodes, liver and brain. When the cancer spreads to the lymph nodes, this causes them to enlarge and become more cohesive.

Objective

The aim of the study is to identify the patient's nursing problems with small cell lung cancer. To plan and evaluate the nursing actions taken to improve the patient's quality of life.

Materials and methods

The research method used in this study is the individual nursing process based on the case report and the assumptions presented by the American nurse Callista Roy. This concept is based on four components: person, health, nursing and environment in relation to adaptation [5]. Callista Roy's theory focuses on the holistic approach to the patient, especially paying attention to the ability to cope with difficult situations. In this model of nursing, the nurse helps the patient through the illness and focuses on the patient's adaptation to new living conditions [6].

Case description:

A 76-year-old patient J.W. has been suffering from small cell carcinoma of the right lung for 8 months. In May 2021, as a result of a fall from a ladder, he was taken to the Hospital Emergency Department, where an X-ray of the shoulder and ribs was performed. The examination revealed a fracture of the right clavicle without displacement and a nodular shadow in the lower right lung field of 50x45 mm, to be further evaluated in a CT scan of the chest. 09.06.2021r. The patient received the results of a CT scan which showed inflammatory changes in the upper and middle lobes of the right lung and a nodular lesion of the lower lobe of the right lung measuring approximately 48x42 mm. J.W. after 2 months he was admitted to the Department of Thoracic Surgery for diagnostic Invasive tumour of the right lung and enlarged mediastinal lymph nodes. The patient underwent endoscopic transbronchial biopsy under ultrasound guidance. The material taken from the right lung and mediastinal lymph nodes was subjected to cytological examination, which showed small cell carcinoma cells.

08.2021r. The patient was admitted to the Podkarpackie Oncology Centre for systemic treatment. More detailed investigations were also performed, including CT scan of the chest, head, abdomen and pelvis without contrast. Chest examination revealed a pathological tissue mass approximately 5.5x6.5x7 cm in size, with partial bronchial involvement. No focal/infiltrative lesions suspected. Subperiosteal lymph nodes moderately enlarged - 14 mm, mediastinal organs without any evident pathology, pleural cavities free. CT scans of the head, pelvis, abdominal cavity and bony structures did not show any pathological changes.

Neck ultrasound did not indicate pathologically enlarged lymph nodes. The patient underwent oncological consultation, which confirmed the diagnosis of small cell carcinoma of the right lung. In view of the 76-year-old's age and comorbidities, the decision was made to treat with a chemotherapeutic regimen, using Carboplatin with AUC 4-5+ GCSF.

08.2021r. The patient received the first cycle of chemotherapy and was discharged home after 4 days in a generally stable condition. The patient was also advised to use Nutridrink preparations and to check blood count.

21.11.2021r. J.W. received a fourth cycle of chemotherapy, after which his condition deteriorated. The patient felt great weakness, nausea, abdominal pain and complained of diarrhea. The man was unable to take food because of the pain. He scored 19 points on the MNA scale, indicating a risk of malnutrition. J.W. was admitted to the Internal Medicine Department, where blood tests and a chest X-ray were performed. Blood results: WBC was 0.7 thousand/ μ l, RBC - 2.24 million/ μ l, HGB - 6.6 g/dl, HCT - 20.09 %, CRP index - 76.97 mg/l. The patient was diagnosed with anemia, leukopenia and thrombocytopenia. The patient was transfused with 3j of CRT and given 2 doses of Filgrastim. After 5 days, the patient was discharged home with the recommendation of further outpatient treatment in the Oncology Outpatient Clinic and POZ.

After 2 weeks the patient's condition deteriorated again with increased dyspnoea (mMRC dyspnoea severity score 3), cough, haemoptysis, chest pain and weakness. Due to the patient's condition he was referred to the Pulmonology and Chemotherapy Department where laboratory tests, sputum culture and chest X-ray were performed. The examination revealed bilateral pneumonia. The patient was treated with antibiotic therapy and symptomatic treatment.

J.W. was advised to complete the cycle due to difficulties in adapting to chemotherapy. The patient has now been referred for radiotherapy treatment. The patient is stressed before his first radiotherapy session as he has no knowledge of the treatment and is worried about possible side effects.

During the interview, the patient reported that he suffers from stage II hypertension, paroxysmal atrial fibrillation and chronic heart failure (NYHA stage II). Additionally, the patient has an established ischaemic heart disease, resulting from two myocardial infarctions (in 1994 and 1997).

Patient is permanently taking the following medications: Cavinton 5 mg - 2 times a day, Sorbifer Durules 100 mg Fe (II) + 60 mg - 1 time a day, Milurit 100 mg - 1 time a day, Acard 75 mg - 1 time a day, Mesopral 40 mg - 2 times a day, Trittico CR 150 mg - 1 time a day 2/3 of 100 mg tablets, Xarelto 20 mg - 1 time a day, Bibloc 5 mg - 2 times a day, Atoris 20 mg - 1 time a day

, Acidum Folicum Richter 5 mg - once daily, Amlozek 5 mg - once daily ½ tablet, Iporel 75 μ m - ad hoc, Captopril 25 mg - ad hoc, Beetroot Forte with iron and vitamin C 500 mg - twice daily, Magnesium B6 48 mg +5 mg - twice daily.

On physical examination of the patient, problems were observed in specific organ systems.

RESPIRATORY SYSTEM:

The patient has accelerated, shallow breathing - 20 breaths per minute, saturation - 97%. Since September 2021, the patient has complained of a chronic cough with expectoration of bloody sputum and exertional dyspnoea. On 5 December 2021, the patient was admitted to hospital with bilateral pneumonia, which caused symptoms i.e. cough, dyspnoea, chest pain. The patient smoked cigarettes for 31 years, 3 packs per day.

THE DIGESTIVE SYSTEM:

Body weight : 59kg

BMI: 22,21

Decreased appetite and thirst caused by a metallic taste in the mouth. Swallowing is normal. The patient has lost 7 kg in the last 5 months, which indicates a high risk of malnutrition. The excretion is disturbed, the patient is constipated. Lack of knowledge about keeping a proper diet. Oral mucosa is clean.

THE URINARY TRACT:

Urine output normal, no pain during micturition.

NERVE SYSTEM:

Patient conscious, oriented auto and allopsychically. GCS score was 15 points. Muscle tension normal. Sleep quality normal.

MENTAL STATE:

A patient at increased risk of depression, with markedly depressed mood, anxiety related to illness and fear of death is revealed. The patient is visibly anxious about his condition and fears leaving his wife alone.

SKIN:

Patient's skin clean, dry. Normal condition of hair and nails. Patient complains of itchy skin. No risk of pressure sores.

CARDIOVASCULAR SYSTEM:

RR: 139/81 mmHg

Heart rate : 114 bpm, steady , high tension. The patient has a palpitating sensation.

The patient suffers from stage II hypertension, paroxysmal atrial fibrillation, chronic heart failure (NYHA stage II), and ischaemic heart disease.

J. W. has a vocational training qualification. He worked as a driver for 25 years and has now been retired for 16 years. The patient lives in a detached house in the countryside, where the living conditions are very good. The patient's home has central heating and hot water. In addition, his wife and daughter with her husband and children live with the patient.

Nursing process

Nursing diagnosis I: Exercise-induced dyspnoea due to cancer of the right lung, causing a feeling of insecurity.

ICNP diagnosis: functional dyspnoea (exertional) [10029414] + threat [10010311].

Goal of care: to reduce dyspnoea and increase the patient's sense of security.

Nursing interventions:

- Assessment of dyspnoea severity according to the mMRC scale.
- Assessment of the patient's general condition: number and nature of respirations, saturation, blood pressure, pulse, colouring of skin and mucous membranes.
- Introduce the patient to the correct sleeping position - lie on your side with your knees slightly bent, while your head and knees should be placed on pillows.

- Teaching the patient and encouraging respiratory gymnastics: - breathing
With the diaphragm, simultaneous tension of the diaphragm and relaxation of the abdominal layers, with the spine straightened and the ribs lifted,
- to carry out movement training as far as possible for the patient,
- breathing through pursed lips
- Explaining to the patient the importance of protection against respiratory infections, through vaccination against COVID - 19, influenza.
- Increase the patient's sense of security by talking to and encouraging the patient to maintain close contact with the family.
- Administering medication and oxygen to the patient as required on medical orders.

Outcome of care: The patient has regular breathing exercises. The dyspnoea has reduced, making the patient feel more secure.

ICNP score: effective airway [10027964] + effective gas exchange [10027993] + safety [10032676].

Justification:

Determining the severity of dyspnoea, allows the selection of appropriate interventions to help the patient. Monitoring of vital signs and observation of the patient's general condition allows objectification of symptoms [7]. The position on the side with the head and knees supported, during sleep supports breathing and reduces the feeling of dyspnoea; additionally, thanks to the pillows used, the body relaxes, mainly in the chest area, which influences freer breathing. Respiratory gymnastics reduces the feeling of dyspnoea, improves well-being and improves exercise capacity [8]. Vaccination against diseases causing respiratory tract infection is intended to protect the patient from possible infection, which may worsen the patient's condition and increase dyspnoea.

Nursing diagnosis II: Discomfort resulting from a chronic cough due to an ongoing cancerous process in the airways.

ICNP diagnosis: cough [10005249] + discomfort [10023066].

Goal of care: To reduce the severity of coughing.

Nursing interventions:

- Assessment of the nature, intensity, duration of occurrence and length of cough.
- Chest auscultation.
- Eliminate factors from the patient's environment that may aggravate coughing - odorous substances, high ambient temperature. Ensure room temperature of 18 - 20 °C and humidity of 60 - 70%. 4. Encourage the patient to rest and avoid heavy physical activity, especially during periods of increased coughing.
- Cough.
- Teaching the patient to cough effectively, taking a maximum inhalation and then exhaling through coughing.
- Inform patients about coughing behaviour (use of disposable tissues, need to cover mouth and nose, hand hygiene).
- Encourage the patient to adopt an optimal position when coughing.

- Assessing the hydration of the patient's oral mucosa and informing the patient of the need to drink fluids.
- Use of inhalations to moisten the oral mucosa.
- Administration of medicines on medical prescription.

Outcome of care: Patient is complying with the indicated recommendations, cough has reduced.

ICNP outcome: adherence to recommendations [10030298].

Justification:

Adequate temperature and air humidity have a positive effect on the hydration of the mucous membranes, which results in reduced coughing. In addition, it reduces the risk of cold, as the patient is not exposed to too much temperature fluctuation when going outside [9]. Learning to cough effectively and using inhalation additionally improve the expulsion of lingering secretions in the bronchial tubes.

Nursing diagnosis III: Respiratory bleeding due to cancer, manifested by expectoration of bloody sputum.

ICNP diagnosis: expectoration [10007362] + impaired airway patency [10001051] + bleeding [10003303].

Goal of care: Clearing the bronchial tree of secretions, reducing haemoptysis.

Nursing interventions:

- During expectoration of bloody sputum, inform the patient to take a sitting position and to ensure calmness.
- Place a cold compress on the chest.
- Inform the patient that during haemoptysis warm drinks should be eliminated, it is advisable to drink cooled water.
- Learning to expectorate effectively.
- Suggest the patient use coloured napkins to wipe their mouth.
- Talking to the family about the need to support the patient and surround him with care to ensure the man feels safe and calm.
- Blood collection on medical order to exclude the risk of anaemia.

Outcome of care: The patient's haemoptysis has reduced slightly. The patient is complying with recommendations.

ICNP outcome: effective airway patency [10027964].

Justification:

The sitting position during expectoration of the bloody secretion is important as it prevents aspiration of the secretion into the bronchial tree and alveoli [10]. The use of cold compresses placed on the chest leads to vasoconstriction and reduces haemoptysis. Coloured serviettes, on the other hand, will remove traces of blood and may relieve the patient's anxiety. It is also important to check the blood parameters to prevent possible abnormalities and to react in time,

e.g. with a blood transfusion. The nurse should also talk to the patient's family so that they are supportive during the illness and when symptoms occur, in order to give the man a sense of security and calm.

Nursing diagnosis IV: Decreased appetite due to metallic taste in the mouth, increasing the risk of malnutrition, resulting from chemotherapeutic treatment.

ICNP diagnosis: risk of underweight [10037586] + impaired taste perception [10022814] + risk of nutritional deficit [10025561].

Goal of care: To improve the patient's appetite and reduce the risk of malnutrition.

Nursing interventions:

- Conversation with the patient and family.
- Assessment of the patient according to the MNA scale, which indicates the risk of malnutrition.
- Monitoring of blood parameters on doctor's orders: blood count, albumin, protein levels.
- Weighing of the patient minimum. 2 times a week.
- Taking care of the patient's oral hygiene.
- Serving the patient small but frequent meals, prepared according to the patient's dietary preferences.
- Ensuring the right temperature and consistency of food.
- Inform the family of the need to prepare healthy, calorie-dense meals for the patient with plenty of protein and an adequate fluid supply (about 2 litres per day).
- Reduce the patient's aversion to meals by serving foods with a strong smell and adding spicier seasonings if the patient wants to.
- Encourage the patient to consume Nutridrink nutritional products.
- Inform the patient and their family of the possibility of seeking advice from a dietician.

Outcome of care: the patient's appetite has improved slightly, but the patient still has a metallic taste in the mouth. Nursing interventions should be continued.

ICNP score: risk of food intake deficit [10023021] + impaired nutritional status [10025746].

Rationale: The risk of malnutrition in a patient with cancer is high, so the nursing intervention should begin with a conversation with the patient, in terms of possible effects that the patient fears after eating, i.e. nausea, vomiting, or constipation. The nurse should also monitor the patient's blood parameters as ordered by the doctor, so that the patient's body does not develop mineral deficiencies, protein deficiencies or anaemia.

Oral hygiene, is an important aspect as a lack of it can lead to inflammation, which further reduces the patient's willingness to eat [11]. A patient at risk of malnutrition and with a metallic taste in the mouth should eat room-temperature or slightly chilled food to reduce the bitter taste.

Meals should also be seasoned according to the man's preference so that he eats them as willingly as possible. In addition, the patient should drink about 2 litres of fluids a day to avoid dehydration and consume protein-rich foods that provide large doses of energy. A consultation with a dietician would help the patient to choose a diet according to his food preferences and the amount of calories needed.

Nursing diagnosis V: Constipation due to chemotherapeutic treatment.

ICNP diagnosis: constipation [10004999].

Goal of care: To improve the patient's bowel movements.

Nursing interventions:

- Inform the patient of the need for hydration (minimum 2 litres of fluids per day).
- Discussion with the patient about appropriate diet and natural laxative products.
- Encourage the patient to do their favourite physical activity.
- Demonstrate to the patient the correct defecation technique.
- During defecation, ensure that the patient maintains intimacy.
- Performing an enema.
- Administration of laxatives on doctor's orders.

Outcome of care: Constipation reduced.

ICNP outcome: effective defecation [10028398].

Justification:

Non-pharmacological treatment is very important in a patient with constipation. The patient should consume foods rich in fibre, e.g. cereal products, wholegrain bread, vegetables, fruits (dried prunes, sultanas, dates), which contain fibre responsible for accelerating intestinal peristalsis and increasing stool weight. A man should consume 20 - 40 grams of fibre daily [12].

Increased fluid supply also enhances the effect of dietary fibre [13]. Another important aspect in the treatment of constipation is physical activity to improve bowel motility. A patient with cancer should do light exercise on days when they have the strength to do so. The patient must also be aware that they cannot withhold a bowel movement and when using the toilet they should adopt a position that facilitates stool expulsion (feet supported on an elevation and leaning forward) [14]. Performing an enema or administering laxative drugs to the patient facilitates the removal of retained faecal masses in the large intestine.

Nursing diagnosis VI: Decreased mood of the patient due to cancer and fear of death.

ICNP diagnosis: depressive mood [10005784] + anxiety before death [10041017].

Goal of care: improving the patient's mood

Nursing interventions:

- Talking to the patient, making them feel safe.
- Encourage the patient to express their feelings.
- Talking to the patient's family.
- Emphasise the positive qualities of the patient.
- Encouraging the patient to pursue their passions.
- Administration of sedative medication as ordered by a doctor.
- Suggest the patient talk to a psychologist.

Outcome of care: The patient's mood has improved, but he still fears death.

ICNP outcome: Reduced depressive mood [10027901] + anxiety before death [10041017].

Justification:

The nurse's contact with the cancer patient is important but also difficult. The nurse should develop a partnership model with the patient, talk to them, help them to express their feelings and answer their questions [15]. It is also important for the patient's family to be supportive during a difficult time. When talking to the patient, be honest and supportive; when the patient is not ready to talk, respect his decision. Suggesting to the man to pursue his passions may help him to overcome his bad mood, as well as highlighting positive character traits the patient. The nurse should also encourage the patient to talk to a psychologist if their mood does not improve and, if ordered by the doctor, administer sedative drugs to reduce the stress of the illness.

Nursing diagnosis VII: Patient's fear of radiotherapy treatment due to lack of knowledge about radiotherapy.

ICNP diagnosis: radiotherapy [10016293] + fear of side effects of the drug [10043222].

Goal of care: To educate the patient and reduce fear of treatment.

Nursing interventions:

- Talking to the patient about the nature and purpose of radiotherapy treatment.
 - Introduce the patient to what a radiation session is like when there is an opportunity to take the patient to a radiotherapy facility.
 - Explaining to the patient how to handle the area of the body being irradiated during radiotherapy.
 - Educate the patient about possible complications that may arise after radiotherapy and how to manage them.
 - Pointing out to the patient who they can go to if they have questions, or if they have worrying symptoms.
 - Providing the patient with information on the necessary items to take with them to hospital.
- Outcome of care: Patient educated, fear of radiotherapy treatment reduced.

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ICNP outcome: reduced fear [10027889] + teaching about radiotherapy [10044622].

Justification:

The nurse's role in reducing the patient's fear of radiotherapy is to talk and educate. The patient should know about the nature, timing of treatment and immobilisation during the session being performed. The patient has the right to talk to the doctor, or nurse, before the treatment and all his questions should be answered to reduce his fear and anxiety. The man should also be given information on how to care for his skin after radiotherapy. He should use gentle products designed for irradiated skin [16]. The patient should also know that changes in the skin may occur in the form of redness, coughing, difficulty in swallowing, or fatigue. All this information given before treatment will reduce the patient's stress and anxiety.

Nursing diagnosis VIII: Patient discomfort due to pruritus of unknown cause.

ICNP diagnosis: itching [10010934] + discomfort [10023066].

Goal of care: To reduce patient discomfort by relieving itching of the skin.

Nursing interventions:

- Drawing the patient's attention to a possible local, or generalised, skin infection caused by scratching.
- Inform the patient of the need for hand hygiene and nail clipping.
- Indicate pH-neutral, fragrance-free and dye-free bath products to the patient.
- Ensuring that the patient's skin is adequately hydrated.
- Distract the patient from scratching by organising leisure time - talking, physical activity.
- Inform the patient not to overheat the skin and to use sunscreen when leaving the house.
- Advising the patient to cool the areas where they feel itchy.
- Administration of medication on doctor's orders.
- Observation of the patient's skin for any wounds.
- To encourage the patient to see a dermatologist.

Outcomes of care: The patient's discomfort was reduced as the itching of the skin subsided.

ICNP outcome: improved skin integrity [10028517].

Justification:

Itching of the skin is often a symptom that causes anxiety in the patient. The nurse should talk to the patient and introduce them to the principles of good skin care and inform them about observing hygiene rules. It should be pointed out to the patient that excessive scratching can lead to wounds, which in turn can become infected and contribute to the development of infections. Washing and disinfecting the hands before contact with the pruritic area reduces the risk of transmission of microorganisms. The patient should also know which products to use for bathing and skin care in order to rebuild the hydro-lipid barrier of the epidermis, eliminate dry skin and consequently reduce pruritus. In addition, moisturisers reduce local inflammation [17]. Cooling the skin by using cool baths also has a beneficial effect on reducing the itching sensation. Not overheating the skin and using creams with a high sun protection factor reduces the risk of skin dryness and consequently pruritus. The nurse should also suggest that the patient see a dermatologist who will find the cause of the problem and administer pharmacological treatment if necessary.

Nursing diagnosis IX: Deficits in patient knowledge of diet in multimorbidity.

ICNP diagnosis: lack of knowledge [10000837].

Goal of care: Patient education.

Nursing interventions:

- Inform the patient to take small but frequent meals at regular times.
- Advise the patient to consume a minimum of 2 litres of fluid per day.
- Eating products rich in fibre, fruit and vegetables and products containing protein.
- Follow an easy-to-digest diet.
- Preparing meals by steaming, baking in foil or in an ovenproof dish.
- Encourage the patient to eat fish.
- Exclusion from the diet of products that may aggravate the symptoms (diarrhoea, constipation).
- Limit consumption of salt (less than 5g per day), sweets and fatty foods.

Outcome of care: Patient educated.

ICNP outcome: knowledge of diet regime [10023772].

Justification:

Proper diet in a patient with multimorbidity is an important aspect of treatment. Adequate caloric intake, variety and intake of vitamin-rich foods enable the patient to remain fit and consequently benefit the healing process. Restricting the intake of salt, sweets and fatty foods prevents obesity, which is dangerous for patients with heart disease because it impairs heart function. Proper nutrition helps the patient to maintain his strength and to feel better.

Nursing diagnosis X: Risk of cardiovascular haemodynamic disturbances due to palpitations in paroxysmal atrial fibrillation.

ICNP diagnosis: arrhythmia [10002536] + risk of cardiac dysfunction [10037314].

Goal of care: To reduce the risk of haemodynamic disorders.

Nursing interventions:

- Monitoring of the patient's vital signs when paroxysmal atrial fibrillation occurs (connection of cardiac monitor electrodes, monitoring of blood pressure, pulse, saturation, respiration).
- Observation of the patient for subjective symptoms - skin colouration, dyspnoea.
- Insertion of a cannula into a peripheral vein and administration of medication as ordered by the doctor.
- Being present with the sick person, supporting, talking to, calming the sick person.
- Encourage the patient to self-monitor blood pressure and heart rate parameters using a validated device.
- Inform the patient of the need to keep a "hypertension patient booklet" to be shown to the doctor during the visit.
- Inform the patient to avoid stressful situations that may lead to arrhythmias.

Outcome of care: The risk of haemodynamic abnormalities was partially reduced, but nursing intervention still needs to be continued.

ICNP outcome: improved self-management [10035576].

Justification:

The most common cardiac arrhythmia is atrial fibrillation [18]. When a patient develops arrhythmias, it is important to reassure the patient, monitor their vital signs so that when the condition worsens, an immediate response can be given by administering medication or oxygen as ordered by the doctor. It is also important to educate the patient on lifestyle changes - less stress, control of blood pressure and heart rate, and regular intake of medicines prescribed by the doctor, so as not to lead to an increased risk of cardiovascular complications. The nurse should teach the patient how to measure their RR correctly - at rest, in a sitting position, with the correct choice of cuff. The patient should also know when to go to the doctor to counteract the consequences that may arise from an abnormal heart rhythm.

Discussion

In Poland, lung cancer has been the most common cause of death among oncology patients for several years. Unfortunately, patients are often diagnosed only at an advanced stage of the disease, in which there is no possibility of surgical treatment. Every year, the incidence of lung cancer is increasing, and this is particularly noticeable in women, who are increasingly dependent on cigarettes, the main causative agent of lung cancer. In recent years, the steadily increasing epidemiological situation has contributed to the search by researchers for new techniques of diagnosis and treatment of cancer to reduce the scale of the problem [19].

The main substance responsible for the onset of lung cancer is nicotine, more specifically an alkaloid that is metabolised by the human body and excreted through the kidneys [20].

Nicotine in high doses affects the medulla oblongata, causing respiratory centre paralysis, and in addition impairs the removal of foreign substances from the airways and leads to frequent airway infections [21]. Lung cancer may follow a different course in each patient, symptoms may be more or less severe, and initially the patient may not observe any disturbing changes. According to the Polish Society of Clinical Oncology, lung cancer is most commonly diagnosed in people over 65 years of age [4].

In the analysed case, the patient was diagnosed with lung cancer at the age of 75. The course of the disease was typical and the cause of the tumour coincided with the risk factors for lung cancer. The patient was addicted to nicotine for 31 years and smoked about 3 packets of cigarettes a day.

According to the European Lung Foundation, the most common symptoms are chronic cough lasting more than 3 weeks, dyspnoea and expectoration of bloody sputum [22]. In the case of J.W., the disease caused the same symptoms, but initially the patient did not pay attention to them. According to Guðbjartsson, chief thoracic-cardiac surgeon at Reykjavik University Hospital, an increasing number of patients are diagnosed incidentally, during a CT scan [23]. In the case described here, a pathological tumour within the lung was noticed, during the X-ray, due to a fractured shoulder, and the patient had not previously noticed any worrying symptoms.

Small cell lung cancer is 70% generalised at diagnosis and is only diagnosed when the patient has metastasised to the lymph nodes or other organs, making surgery impossible [1].

Small cell lung cancer is sensitive to chemotherapeutic treatment, which improves the outcome. Drugs used in the first line are cyclophosphamide, carboplatin, topoisomerase inhibitors and other antimetabolic substances and antimetabolites [1]. Oncologists, increasing the patient's chance for remission of the disease and, consequently, prolonging life, often decide on combined therapy, which combines chemotherapy with radiotherapy. In the case of J.W., surgical treatment was not possible due to the burden of coexisting diseases and the patient's age. He was treated with combination therapy - chemotherapy with carboplatin, with radiotherapy planned as a second stage. Forty percent of lung cancer patients are diagnosed with anaemia, which can result from a number of causes, often a poor diet or impaired absorption of vitamin B12 [24]. Anaemia in the oncological patient may lead to a worsened quality of life, impaired or delayed effect of chemotherapeutic treatment, and additionally cause a worse prognosis. In the analysed case of a patient with lung cancer, anaemia also occurred, which resulted from the weakening of the organism due to chemotherapeutic treatment. This resulted in reduced food intake and consequently reduced vitamin B12 supply. The patient experienced typical symptoms that indicated anaemia i.e. dizziness, fatigue and tachycardia. Accelerated heart rate increases the risk of haemodynamic disorders and cardiovascular disease. In the case of J.W., the risk is higher because the patient suffers from paroxysmal atrial fibrillation and ischaemic heart disease.

In this case, the transfusion of red blood cells was an essential element of treatment, which led to the compensation of deficiencies and improvement in the patient's quality of life. In addition, the patient was given an appropriate diet and iron supplementation to increase haemoglobin levels and prevent anaemia.

According to Pękala, lung cancer in patients often leads to an increased risk of depression

[25]. This is due to the progressive process of the disease, accompanied by pain symptoms and other discomforts. In addition, for patients who cannot be treated surgically, the news of chemotherapy or radiotherapy causes anxiety and fear that the treatment will be ineffective and the disease will lead to death. In J.W.'s case, the information about his lung cancer led to an increased risk of depression, as he felt the chemotherapeutic treatment had great side effects and feared that it would not have the desired effect, leading to the patient's death. In cancer, the patient's family also often feels intense fear for their loved one and helplessness. One of the attitudes that Rospęk describes is active cooperation, which focuses on honesty and active communication between family members and medical personnel [26]. This was also the attitude adopted by the family of J.W. for whom they were a great support, which contributed to the improvement of the patient's mental state.

The aim of the study was achieved as the most important nursing problems of a patient with lung cancer were presented. After analysis of medical records, interview, observation of the patient and use of questionnaires and scales, an individualised process of care for the patient was planned. Research tools that allowed a closer look at the patient's problems made it easier to perceive the difficulties the patient was facing, including fear of the disease, risk of malnutrition and somatic problems.

The nurse as a member of the therapeutic team plays an important role in the treatment process. Through her interventions she influences the reduction of pain, improves the quality of life of cancer patients and has an educational and supportive function. By observing the patient he/she tries to help him/her adapt to new living conditions which have changed as a result of the cancer. It is essential to approach the patient holistically and to focus on all their problems and to respond appropriately. It is also important to include not only the patient but also the family who, when informed of the illness, also feel anxious and fearful for their relative. Adequate education and motivation of the patient has a positive effect on the treatment process and on the long-term maintenance of the patient's capacity for self-care. Careful observation of the patient decreases the risk of the onset of worrying symptoms such as malnutrition, or the development of depression. The full involvement of nursing staff in the care of a patient with cancer helps the patient to accept the disease and cope with the discomfort it causes. The National Cancer Strategy Act of 2019 aims to improve prevention, quality of life in patients with cancer through advances in the care system and increased access to cancer diagnosis and treatment [27].

Conclusions

In patients with lung cancer, the most common nursing problems resulting from the disease are cough, exertional dyspnoea, expectoration of bloody sputum, reduced appetite due to metallic taste in the mouth, constipation, and lowered mood and fear of death.

Reduced levels of acceptance of the disease have a negative impact on the patient's overall condition, causing anxiety, and may eventually lead to an increased risk of depression. Family support and assistance to the patient during the illness have a positive effect on acceptance of the illness and new living conditions. Cancer patients expect honesty from their family and medical staff, and permission to express their emotions.

The care of the lung cancer patient should be holistic and focus on the patient's adaptation to new living conditions caused by the disease. The care of the lung cancer patient should be individually tailored to the needs of the patient.

Education, motivation for rehabilitation have a positive effect on the patient's biopsychosocial status. Patients' fear of oncological treatment is often caused by lack of knowledge about the diagnostic and therapeutic procedure.

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