Nursing Case Study Masters

Introduction

Summary of case

The case study is about a geriatric client aged 74 years with multiple medical conditions and immense health needs. The patient is a known diabetic client with hypertension, cellulitis and nephropathy. The management of such a client requires a broader approach and a multi-dimensional intervention (Rello et al., 2010). The main reason why I chose the patient as a case study was to enable me to understand the interplay of the multiple conditions viv-a-vis their impacts on a geriatric patient. The patient is also on several medications which will form a basis of learning as regards to poly-pharmacy and nursing care.

The study will also enable me to understand how to conduct a comprehensive assessment and manage a geriatric client with multiple health needs. This case study will decipher through the management of Mrs Rogers and formulate two comprehensive priority nursing care plans for the patient. The client also has emotional needs due to the fact that she lives alone with no relative around to confide in, thus the case study will also enhance my nursing management in non-pharmacological instances and psychological wellbeing.

Discussion

Trans-cultural nursing

Trans-cultural nursing refers to ways in which professional nurses interact with culture. The concept is a particular cognitive nursing speciality focusing on nursing phenomena, health, global cultures and comparative cultural caring. The concept helps nurses to provide culturally acceptable and appropriate care to their patients. The concept entails

learning international health issues and cultures of different countries vis-à-vis professional nursing practice. The objectives of transcultural nursing is to advance the cultural competence of nurses globally, advance knowledge of the field through scholarship, develop ways of enhancing social change for cultural competence in nursing care, and to promote the efficient non-profit financial corporation.

Case review: cellulitis

Any form of compromise to the flow of blood caused by microvascular or macrovascular diseases such as diabetes and hypertension is associated with a poor sensation of lack thereof as a result of neuropathy thus predisposing one to infections particularly on the distal end of the lower limbs (Peate, 2016). Diabetic foot infections assume four forms, namely; cellulitis, soft-tissue and deep skin infections, acute and chronic osteomyelitis. Cellulitis is mostly confused for deep venous thrombosis due to the overlying symptoms of skin tenderness and warmth to touch.

Pathophysiology

The bacteria that exist on the skin as normal flora could gain access into the deeper tissues following cuts or skin breaks. Once the bacteria invade the skin, they disseminate rapidly, infecting the deeper layers of the skin to reach the bloodstream and the lymph nodes from where they spread throughout the body (Comer et al., 2015). The dissemination results in flu-like symptoms such as fever or chills. Cellulitis is commonly caused by *Streptococcus sp* (*alpha-hemolytic streptococci*) and *Staphylococcus aureus*, and *Bacteroides sp* of bacteria.

Skin injuries such as surgical incisions, insect bites, and cuts are the common portals of entry for the bacteria (In acton, 2012). Other common risk factors to the infection are a

previous positive history of cellulitis, obesity, poorly controlled diabetes, old age, intravenous drug use, pregnancy, burns, lymphedema, skin conditions that could cause skin breaks such as athlete's foot and eczema, and a weakened immune status such as is the case in prolonged use of corticosteroids, diseases that affect the flow of blood to the extremities such as varicose veins or chronic venous insufficiency, chemotherapy and HIV and AIDS.

Nursing assessment

Nursing assessment plays a key role in the management of patients as it enables the nurse to plan care and evaluates the interventions. The assessment of Mrs Barbara followed the ABCDE framework of the nursing assessment. The assessment starts by looking into the airway of the client for patency followed by the assessment of the breathing pattern and effort (In Acton, 2012). The latter led to the administration of oxygen to the patient via a face mask. The breath sounds were heard using the stethoscope. The circulatory status was also assessed by assessing the temperature. The disability status of the patient was also assessed by examining the level of hypoxia and hypercapnia and giving oxygen as required. The use of accessory muscles is also assessed. The circulatory status was also assessed by certain laboratory blood tests.

Exposure is also considered by observing the dignity of the patient and keeping them warm. Head and toe assessment was done to determine the risks to health. The first sign of cellulitis is usually a painful swollen reddish area that is tender to touch and feels hot. Other signs of cellulitis include skin ulcerations that grow rapidly, abscess formation, chills, shaking, lethargy, myalgia, and dizziness. Lethargy, drowsiness, red streaks, and

blistering commonly signify the dissemination of the disease, usually to the lymph nodes (In Acton, 2012).

Nursing diagnosis

Some of the nursing diagnoses that were identified after the assessment was ineffective tissue perfusion related to sepsis as evidenced by oliguria and acute pain related to cellulitis. The patient also had a self-care deficit and risk for impaired skin integrity. The diagnosis of cellulitis relies on history and physical examination of the patient and appropriate laboratory tests. The clinicians observe for the classical signs of warmth, pain, reddening, and swelling coupled with inflammation of the nearby lymph nodes (Comer et al., 2014). Cellulitis differs from erysipelas as it invades the inner tissues and is often associated with abscesses, carbuncles, and furuncles.

Planning

Planning of nursing care improves the efficiency of nursing practice and enhances continuity of care. The planning should include self-care, educational needs as well as the plan of treatment. Sepsis is a life-threatening condition that occurs as a result of the response of the body to an antigen leading to tissue and organ injury. The common signs of sepsis are mental changes, hypercapnia, increased heart rate, and changes in body temperature. In clients with a weakened immune system and those with extreme ages such as the very young and the elderly, the body temperature may be low (Brunner & Smeltzer, 2010). Mrs Rogers presented with a low temperature of 35^0C, and an elevated heart rate of 104 beats per minute and a slightly elevated breathing rate of 23 breaths per minute.

Interventions

The Sepsis 6 bundle was used to manage the sepsis developed by Mrs Barbara. The framework was developed to help reduce the mortality rate of patients with sepsis, reduce the duration of hospital stay, and improve their management altogether. Sepsis Six bundles contain three therapeutic and three diagnostic criteria that should be observed within the first hour of sepsis management. The first step was to administer oxygen to the patient to reach a target of oxygen saturation above 94% followed by the collection of blood samples for culture (Peate, 2014). Depending on the results of the blood culture, appropriate antibiotics are administered intravenously. The fourth step involves measuring lactate levels and performing a complete blood count. The fifth step of the Sepsis Six Bundle included the commencement of intravenous fluid resuscitation followed by the final step that involves the accurate measurement of urine output. Nursing interventions should be based on prior assessment, diagnosis and planning. Antibiotics are usually prescribed for sepsis and cellulitis based on the isolated microbe and the presence of purulence. The most effective antibiotics for the infection are penicillins, macrolides, fluoroquinolones, and cephalosporin (Hamilton, 2015). Surgical management is usually the management of choice in cases where purulence is present. The latter is usually followed by antibiotic therapy for prophylaxis. Analgesic is also prescribed for pain, however, pain should be assessed as extreme pain may point towards necrotizing fasciitis.

The microbes that cause cellulitis are normal skin flora but could cause infection when they gain access to the usually sterile areas of the deeper tissues. The bacteria invade the inner tissues when the integrity of the skin has been altered such as by an insect bite, a gaze, cut, tattoos, animal or human bite, puncture wound or leg ulcers. Skin aspirations

and blood culture may not be helpful for non-purulent cellulitis. Ultrasound is used to identify abscesses in case of antibiotic failure. A Doppler scan done on the right leg ruled out deep venous thrombosis confirming the diagnosis of cellulitis type 4 with sepsis. Other tests include blood sample for Erythrocyte Sedimentation Rate (ESR), C - reactive protein (CRP), Full Blood Count (FBC), and blood culture. A swab is taken from the infected leg ulcer for culture to identify the offending microbe.

Conclusion

Critical analysis of the case study

Impacts of uncontrolled diabetes

Uncontrolled diabetes mellitus type 2 can lead to many complications such as nephropathy, neuropathy, retinopathy, foot damage, poorly healing wounds, cardiovascular diseases and skin conditions. Neuropathy is caused by the damage to the blood vessels supplying the nerves by the high blood glucose levels (Brill, 2012). This can lead to a gradual loss of sensation in the affected area. Nephropathy caused by diabetes can lead to a decreased urine output as is seen in Mrs Rogers' case. If left untreated, severe kidney damage can lead to end-stage renal failure.

Geriatric clients are at a higher risk of contracting cellulitis. Patients with uncontrolled diabetes are also at risk due to the detrimental impacts of the disease on the immune system. The blood supply to the lower extremities is compromised leading to foot ulcers or diabetic foot (Brill, 2012). If the blood glucose is poorly controlled, bacteria are able to multiply rapidly in the affected area and gain access into the bloodstream causing sepsis. Neuropathy causes the ulcers not to be painful; therefore, they frequently become infected resulting in sepsis.

Impacts of sepsis

Severe sepsis leads to insufficient blood flow and poor organ function of vital organs such as the kidney. Decreased tissue perfusion is seen in decreased urine output, high blood lactate, and low blood pressure. The hypotension is a result of higher cardiac output and decreasing systemic vascular resistance (Rello et al., 2010). The common locations for sepsis are primarily the abdominal organs, the skin, brain, urinary system, and the lungs. The result of the above is related symptoms such as nausea and abdominal pain, difficulty in breathing and decreased urine output.

Comprehensive nursing care plans

Acute pain related to cellulitis as evidence by self-report of pain intensity of 2/3 by the use of a numeric rating pain intensity scale.

Patient Name: Mrs Rogers **Date of Birth**: 15th June 1943				
Assessment	**Nursing diagnosis**	**Goal**	**Interventions**	**Rationale**
Subjective data: The patient reported to experience a sharp shooting pain of the right	Acute pain related to cellulitis as evidence by self-report of pain intensity of 2/3 by the	The patient will report pain relief at levels less than 1 on a rating scale of 3 after 4 to 6	The nurse will foresee the need for pain relief strategies.	Early intervention in pain relief strategies decreases the overall amount

foot in a scale of 2/3. Objective data: The right leg was tender to touch. Assess for signs that are related to pain. Assess the patient's anticipation of pain relief and willingness to participate in pain relief strategies.	use of a numeric rating pain intensity scale.	hours of interventions. By the end of the day, the patient will have demonstrated an improved health status such as baseline levels for respiration, blood pressure, pulse and posture. By the end of the day, the patient will have demonstrated a greater capacity of utilizing both pharmacological	The nurse will acknowledge the pain reports promptly.	of analgesics used. The perception of time of the patient could be distorted by a painful experience. Pain could be aggravated by fear and anxiety which can be avoided by immediate response to pain. Demonstration of concern for a patient's comfort fosters

		and non-pharmacological methods of pain relief. By the end of the day, the patient will display an improvement in coping from pain and general mood.	The nurse will eliminate the sources of discomfort and additional stressors to the patient. The nurse will provide rest periods for the patient to promote pain	a trustful relationship between the nurse and the patient. The patients' ability to tolerate painful stimuli may be lowered if there are intrapersonal or environmental factors stressing them. The painful experience of a patient could be

			relief, relaxation, and sleep. The nurse will determine the appropriate strategy of pain relief. The nurse will administer IV	enhanced by exhaustion. Pain could increase fatigue which could further exaggerate pain. A quiet and peaceful environment promotes rest. Patients who experience acute pain should be given non-opioid analgesics unless contraindicated.

			paracetamol 1g three times a day for three days.	Non-steroidal anti-inflammatory drugs (NSAIDS) such as paracetamol works in the peripheral tissues to block the synthesis of prostaglandins that stimulate nociceptors. The NSAID is effective in managing mild to moderate pain.
			The nurse shall employ the use of non-pharmacologic pain relief	Hot compresses provide relief from pain by

			strategies such as hot and cold compresses. The nurse will massage the affected area when suitable.	improving blood flow to the affected area and reducing pain reflexes. Cold compresses reduce pain by lessening the rate of inflammation and spasticity of the muscles and lowering the production of pain-inducing chemicals. Massaging the affected area blocks the

				transmission of pain, minimizes swelling as a result of oedema and increases endorphin levels.

Evaluation:

The patient reported relief from pain at a level of 1/3 in the numeric pain scale after 6 hours of nursing intervention.

The patient demonstrated improved health status by having baseline vital signs that fall within the normal range after 24 hours of nursing intervention. The temperature was 36.5^0C, respiratory rate of 18 breaths per minute, a pulse rate of 82 beats per minute, and blood pressure of 110/70mmhg.

The patient demonstrated improved capacity to utilize both pharmacological and non-pharmacological strategies of pain relief after 24 hours of nursing intervention.

The patient demonstrated appropriate coping strategies after 24 hours of nursing intervention.

Ineffective tissue perfusion related to sepsis as evidenced by oliguria

Patient's Name: Mrs. Rogers **Date of Birth**: 15th June 1943				
Assessment	**Nursing Diagnosis**	**Goal**	**Interventions**	**Rationale**
Assess for signs of ineffective tissue perfusion. Assess for the possible contributing factors of impaired arterial blood flow. Review laboratory data such as Arterial	Ineffective tissue perfusion related to sepsis as evidenced by oliguria	After 24 hours of nursing intervention, the patient will maintain adequate tissue perfusion as evidenced by blood pressure within the normal range, absence of edema, and a urine output of	The nurse will submit the patient for diagnostic assessments as required. The nurse will administer	Various diagnostic tests are available depending on the cause of the condition. Doppler's scan, vascular stress test and angiograms could be helpful. Adequate fluid intake optimizes

Blood Gas, electrolytes, creatinine levels, and international normalized ratio. Assess for work breathing and the respiratory rate and patterns. Assess for changes in blood pressure and changes in arterial oxygen. Assess for changes in the		at least 30mls per hour. The patient will exhibit improved tolerance to activities after 24 hours of nursing intervention. By the end of the day, the patient will exhibit no signs of sepsis.	intravenous fluids (Hartman's solution) as ordered and check for optimal fluid balance. The nurse will assist the patient with position changes. The nurse will explain all the	cardiac output and filling pressure required for tissue perfusion. Assisting the patient with position changes from a supine to sitting position reduces the risk for orthostatic blood pressure changes. Understanding the expected

mental status of the patient. Assess the fluid input and output status of the patient.			treatments and procedures to the patient. The nurse will administer antibiotics as ordered (Clindamycin 900mg TDS and ciprofloxacin 400mg BD).	sensation and events allays anxiety associated with the unknown. Ciprofloxacin is a broad-spectrum antibiotic that belongs to the class of fluoroquinolones. The antibiotic is effective against both Gram-negative and Gram-positive bacteria. Ciprofloxacin works by inhibiting DNA gyrase thus

				stopping bacterial cell division. Clindamycin works similarly to macrolides by inhibiting bacterial protein synthesis and the translocation of ribosome.
			The nurse will promote early ambulation, active and passive range of motion movements.	Ambulation and exercise prevents venous stasis that could further compromise blood circulation.
			The nurse will administer	Oxygen therapy saturates the

			oxygen therapy to the patient as required.	circulating hemoglobin thus augmenting blood efficiency in reaching the ischemic organs.
			The nurse will position the patient in a semi-Fowler's or high Fowler's position as tolerated.	A semi-Fowler's and high Fowler's position promotes alveolar gaseous exchange.
			The nurse will monitor the fluid input and output status of the patient.	Monitoring fluid input and output helps to detect any fluid deficit or overload. A fluid output of at

				least 30mls per hour is an indication of adequate tissue perfusion.
			The nurse will keep the patient warm.	Keeping the extremities warm maintains vasodilatation thus improving blood flow to the affected area.
			The nurse will elevate the edematous leg as ordered and avoid putting anything	Elevation of the edematous limb reduces edema and promotes venous return. Any pressure under the knee

			below the knee.	could limit venous return.

Evaluation:

The patient maintained adequate tissue perfusion after 24 hours of nursing intervention as evidenced by a blood pressure of 110/70 mmHg, and a urine output rate of 35mls per hour.

The edema on the right foot of the patient subsided according to the mid calf circumference that dropped from 54cm to 46cm.

The patient demonstrated an improved tolerance to exercises after 24 hours of nursing intervention.

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