

Patient support during cytotoxic chemotherapy

- a practical summary for nursing staff

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Introduction

Oncology is the study of, and treatment of cancers; while Haematology is the name given to the medical discipline concerned with diseases of the blood and blood forming organs e.g. bone marrow, spleen, lymph nodes, thymus gland.

The following are likely to be affected by a cytotoxic chemotherapy regimen:

- Red blood cells (erythrocytes) – severe anaemia, and a blood transfusion may be required
- Platelets (thrombocytes) - thrombocytopenia, and platelet transfusions may be required.
- White blood cells (leucocytes) comprise neutrophils, lymphocytes and monocytes – neutropenia (ie. a neutrophil count below 1000mm³) will make the patient very susceptible to infection, and protective isolation may be required. Patients should also be informed that a sore throat may be a symptom of neutropenia and this should always be reported to their nurse or doctor.

Therefore regular blood tests are necessary to monitor the effects of the chemotherapy, and the Oncologist will decide on the next cycle of treatment based on these results.

What is chemotherapy and how does it work?

Cytotoxic (i.e. cell toxic) chemotherapy can be administered intravenously, intramuscularly, orally and intrathecally (by lumbar puncture) in order to reach all parts of the body which may contain cancerous (malignant) cells.

These drugs are prescribed in combination, to enhance the duration and effect of each other, according to a regimen and dosage calculated to the patient's individual needs.

Chemotherapy targets rapidly dividing cells, interrupting and/or altering the cell growth cycle; which is why for example, side effects commonly affect the lining of the mouth, the digestive system, bladder, skin, nails, hair and bone marrow.

The severity of side effects varies from person to person, and depends on the type of drugs given, their dosage and the patient's general state of health.

Side effects – practical advice and nursing support

There are many ways to prevent or minimize adverse symptoms and side effects – as the patient's advocate, nurses should encourage the patient and family to ask questions and provide reassurance. Most importantly, these side effects are temporary, and will disappear after the treatment course is given.

Fatigue and listlessness

It should be explained that once the effects of chemotherapy have worn off, low energy levels will improve. In the interim, the patient should try to -

- Rest as much as possible
- Avoid strenuous exercise or work, or becoming overtired
- Allow family and friends to help with cooking, shopping, fetching children from school etc. (This also enables them to do something constructive to help)
- Learn methods of relaxation
- Eat nutritious balanced meals containing protein, fat and carbohydrates. A vitamin and mineral supplement may be helpful, but advice should be sought beforehand from the Oncologist if/when it would be appropriate to take it

- Share their fears with their doctor or nurse. Medication for anxiety or insomnia can be prescribed if necessary.

Care of the mouth and gums

Chemotherapy affects the lining of the mouth, resulting in ulceration and/or infection -

- It is important that patients drink as much as possible to keep their mouth moist and clean.
- A soft toothbrush should be used, preferably with a small head (e.g. child's toothbrush).
- The teeth, gums (and tongue if possible) should be brushed gently at least three (3) times per day, and especially before going to sleep at night.
- A dilute antibacterial mouthwash - preferably chlorhexidine gluconate based, with no/ a low alcohol content and with local anaesthetic if necessary - is an important adjunct to oral care during cytotoxic chemotherapy.
- If the patient has dentures, and their mouth is ulcerated or painful, they should be removed as often as possible - pureed food and soups may be necessary in the interim, to ensure adequate kilojoule intake and nutrition.
- Bleeding gums should be reported to the nurse or doctor immediately, as this could indicate a low platelet count.
- Regular visits to the dentist are recommended, to maintain oral health and identify any problems which may affect or interrupt the chemotherapy regimen.

Nausea and/or Vomiting

Many patients fear nausea and vomiting, however it is important to explain that not all cytotoxic drugs cause this side effect. It may be inadvisable to mention nausea as a side effect - the nurse should be conversant with agents which are commonly associated with nausea, and offer reassurance that effective anti-emetic medications will be routinely prescribed to combat it. Practical tips include -

- Drinking as much fluid as possible, to flush out toxic waste products and prevent dehydration.
- Eat small portions of food, at regular (2-3 hourly) intervals.
- Cold and/or savoury food may be more appetizing, and are less likely to give off an aroma.
- Foodstuffs rich in protein e.g. custard, ice cream, yoghurt, chicken, fish are recommended.
- Keep savoury biscuits and soft glucose sweets (e.g. "wine gums", "jelly babies") on hand.
- Crushed ice and ginger flavoured drinks may also prove helpful for nausea.
- *Note:* if the patient is neutropenic, certain types of food may be restricted (e.g. raw food, salads).

Constipation and/or diarrhoea

- Drink as much fluid as possible, and any constipation should be reported to the nurse or Oncologist.
- If constipation is a side effect, the patient should be instructed not to strain when trying to pass a stool, as the risk of developing an anal fissure is increased during this time.

Pain

- The patient should always describe the type, nature and intensity of their pain themselves, as this will assist with a 'pain diagnosis' and the prescribing of appropriate analgesic and anti-inflammatory agents.
- Pain scales are a useful clinical tool - however they require staff training to ensure accuracy and consistency. The nurse has a responsibility to explain that analgesia, if needed, is taken at regular intervals, and strictly according to the doctor's instructions.
- It is important that the patient understands the concept of 'break through pain,' which may make adequate pain control more difficult.
- Above all, the patient should be encouraged to report any/all pain - it is certainly not the nurse's place to make a prejudicial judgment of the patient's pain levels.

Hair loss (Alopecia)

Certain cytotoxic drugs are known to cause partial to complete hair loss. This dramatic change to the patient's body image is traumatic; therefore the healthcare team should understand the emotional impact of this side effect, and be knowledgeable about how to obtain suitable wigs and turbans.

- If the patient has long hair, it is recommended that they cut it short/er (even if gradually, to lessen their anxiety and acclimatize to the changes)
- Mild shampoos, conditioners, 'wet/dry' hairbrushes or wide toothed combs will minimize hair loss.
- Hair should be towel-dried very gently and hairdryers and curling tongs avoided - as well as tight hairstyles and the use of tight elastic bands or grips.
- Perms or hair colour should not be applied during treatment; however female patients should be encouraged to experiment with makeup!
- Reaffirm to the patient that hair loss is **temporary** and that re-growth will occur within weeks. Explain that their "new" hair will be slightly different in colour and/or texture, and may be curlier than before!

Care of the Skin

- A foam overlay on top of the mattress will provide added comfort and protection.

- Excessive bruising and skin rashes should be reported to the nurse and doctor.
- Cuts or scratches should be attended to as soon as possible, and covered with an antiseptic dressing to prevent infection.
- Bath oils and moisturizers are very helpful to maintain skin moisture and elasticity, however if the patient is frail, supervision is essential.
- Lastly, exposure to sunlight during and after treatment should be avoided, as certain drugs may cause extra sun-sensitivity and unsightly pigmentation.

Infection Prevention and Control

This is an important and on-going concern during cytotoxic chemotherapy treatment and afterwards.

- Hand washing is the most important measure to prevent cross infection
- **Alcohol hand rub** should also be used at frequent intervals to augment hand hygiene and the patient educated about the importance of washing their own hands.
- The care of the intravenous therapy insertion site should be carefully explained to the patient and their family; and any redness, pain or swelling around the site reported immediately.
- Patients with tunneled central venous catheters must avoid traction, tugging, friction or fidgeting with the catheter, and the importance of their own hand hygiene reinforced.
- The handling and specialized care of the catheter and/or implanted 'port' should only be undertaken by Professional Nurses, and competency based training undertaken at regular intervals.

Admission of the patient to hospital for chemotherapy

It is recommended that the patient is cared for in a side ward (i.e. in isolation). Although lonely at times, it provides quieter surroundings and the opportunity for privacy and sleep.

It may be necessary to restrict visitors as an infection prevention measure; whilst minimizing the number of staff members designated to care for the patient will reduce exposure to infection. The routine use of face masks and disposable aprons for any patient contact during protective isolation is an essential precaution.

Raw food and salads should be avoided if the patient's leucocyte count is low - only fruit which can be peeled is recommended (e.g. bananas, apples, oranges pears etc.). Fresh flowers may also have to be removed from the room.

Conclusion

It is hoped that this summary has highlighted the more common aspects of advice, encouragement and support which may be required for patients undergoing cytotoxic chemotherapy.

Compassion, patience and simply being approachable will allay many fears and promote confidence and trust in the care team.

Recommended resources for more information:

1. The Cancer Association of South Africa. <http://www.cansa.org.za/cansas-care-support/> Accessed 18.1.2016
2. Macmillan Cancer Support. <http://www.macmillan.org.uk/information-and-support/index.html> Accessed 18.1.2016