Helping cancer patients in the community

Cancer patients are spending more time out of hospital and in the community. Steve Williamson describes cancer services in the UK and looks at how community pharmacists can support those undergoing treatment.

There are around 1.8 million people with cancer at any one time in the UK and it can be estimated that at least half of these are being treated with chemotherapy or radiotherapy. Last month, the Department of Health published "Improving outcomes: a cancer strategy". This builds on previous publications recognising the need for increased focus on early detection and prevention of cancer and long-term follow up for those living with the disease.

The impact of more effective treatments means management of some cancers is now similar to long-term conditions. For example, patients receiving oral imatinib for chronic myeloid leukaemia have a 95 per cent five-year survival rate and can continue treatment for many years.

The most common cancers in the UK are breast, lung, colorectal and prostate. Breast cancer has the best prognosis, with an 80 per cent five-year survival rate, and lung cancer has the poorest prognosis, with an average five-year survival of just 7 per cent. Only 25 per cent of patients survive one year so early diagnosis of lung cancer is critical and community pharmacists can play an important role (see Resources).

Patients with suspected cancer must be diagnosed within 31 days of referral or presentation (either by their GP or following acute hospital admission) and must have their first treatment within 31 days of diagnosis. This 62-day timescale forms part of DoH cancer wait targets. After diagnosis, treatment is planned by specialists at a multidisciplinary team ("MDT") meeting.

Role of the pharmacist
Specialist oncology pharmacists work as part of the secondary care team, managing cancer patients alongside oncologists, haematologists, oncology nurses, physiotherapists, counsellors and others. These pharmacists are responsible for ensuring safe delivery of chemotherapy services, pharmaceutical care of patients and advising on choice of therapy. The British Oncology Pharmacy Association has produced standards and competencies for pharmacist verification of prescriptions for anticancer medicines.

Non-specialist pharmacists, including community pharmacists, might not be directly involved in the supply of cancer medicines, but patients taking these medicines may access community pharmacy for advice on products to manage side effects and, potentially, to supplement their treatment. Traditionally, cancer therapies have been managed by secondary care specialists but as care improves and patients survive longer there will be more room for primary care involvement. For example, recent years have seen growth in oral cancer medicines, which means more patients are treated with medicines that can be taken at home. These medicines have the potential to be dispensed from community pharmacies (see Special feature, pp144–5).

Cancer treatments
Cancer treatments comprise surgery, traditional chemotherapy or targeted therapies, radiotherapy and hormonal therapy. Choice depends on cancer type but surgery is often combined with radiotherapy or chemosurgery, or both — chemotherapy alone is rarely curative. Some patients will receive all four treatments.

There are two branches to solid tumour oncology: clinical oncology and medical oncology. Both types of oncologist give systemic anticancer therapies (SACTs) to patients but only clinical oncologists administer radiotherapy. Haematologists or haemat-oncologists prescribe SACTs for blood, lymph and bone marrow cancers. SACTs are used for patients with localised or metastatic malignancy, as well as for patients whose cancer has, potentially, been cured by surgery but for whom further adjuvant systemic therapy improves their prognosis.

Chemotherapy
Although drug development is moving towards biologically targeted therapies, chemotherapy currently remains the backbone of cancer treatment. Some cytotoxic drugs destroy cells, including those not actively dividing, at all stages of the cell cycle (cycle specific). Others only affect cells at specific parts of the cycle (phase specific). Because cancer drugs act through a complex interaction with the cellular biology of tumours, it is important to consider the impact of scheduling and duration of treatment. At any one time cells in a tumour will be at various stages of the cell cycle and if a phase-specific agent were administered only a fraction of the cancer cells would be susceptible. Consequently, cytotoxic medicines are given in different combinations and in cycles of three to four weeks. A course of chemotherapy will involve a number of cycles, which might be fixed or which might be given until disease progression, that is, until they stop being effective. Cancer cells can develop resistance to cytotoxic drugs through a variety of mechanisms so patients who respond well to first-line chemotherapy can relapse and different drugs will be needed.

1 How is cancer treatment toxicity assessed?
2 What treatment options are available for common side effects of cancer therapy?
3 What advice can be given to cancer patients with regards to nutritional supplements or herbal products?

Before reading on, think about how this article may help you to do your job better.
Targeted therapies
Most current research of cancer medicines is focused on developing drugs directed toward specific pathways involved in tumour growth and progression. As understanding of tumour biology increases, more selective drugs, targeting cellular changes specific to cancer cells, are being developed. It is expected that these will be less harmful to normal cells and, consequently, cause fewer side effects than conventional chemotherapy.

Targeted cancer therapies interfere with cancer cell proliferation and spread in different ways. Many focus on proteins that are involved in the cell signal transduction pathway. This complex communication system governs basic cellular functions and activities, such as division, movement, how a cell responds to specific external stimuli and even cell death. By blocking signals that regulate cell division, targeted therapies can help stop disease progression. Other targeted therapies induce cell death directly, by inducing apoptosis, or indirectly by stimulating the immune system to recognise and destroy cancer cells.

Most targeted therapies are either small molecules or monoclonal antibodies. Small molecules (eg, amatinib) diffuse into cells and act on intracellular targets. Monoclonal antibodies (eg, trastuzumab) have a large molecular weight so cannot penetrate the cell plasma membrane and are directed at extracellular targets.

Radiotherapy
Radiotherapy involves targeted exposure of tumour cells to radiation administered as photons (ie, X-rays, gamma rays) to kill tumour cells by damaging DNA.

Treatment toxicity
Cytotoxic agents are classed as high risk medicines because of their many potentially harmful side effects and the decision to use chemotherapy depends on the balance between toxicity and benefit. Because these drugs attack all cells undergoing rapid cell division, toxic effects are most obvious in bone marrow, mucous membranes and hair.

One advantage of targeted therapies is that they generally do not cause cumulative bone marrow toxicity. That is not to say these therapies do not have significant toxicities — patients on the epidermal growth factor receptor (EGFR) inhibitors (eg, erlotinib, gefitinib, cetuximab) are still prone to diarrhoea and skin reactions — but the mechanisms involved are different. Chemotherapy toxicities can generally be divided into haematological and non-haematological types.

Like chemotherapy, radiotherapy produces adverse effects in normal tissues. Side effects are either acute, subacute or late. Acute effects are common, rarely serious, and usually self-limiting. They tend to occur in skin or mucosal surfaces (eg, oropharynx, oesophagus, intestines, bladder) and are due to radiation-induced cell death. Subacute toxicities occur two weeks to six months after treatment (eg, radiation pneumonitis) and late effects (eg, fibrosis or long-term organ damage) occur six months or more after treatment.

Bone marrow suppression
The bone marrow stem cell population continually produces cells that mature and differentiate into erythrocytes, some white blood cells (granulocytes or leukocytes) or platelets. Neutropenia (defined by the neutrophil count, not the total white cell count) is the direct effect of chemotherapy on the bone marrow. The degree depends on drug, schedule and dose. It usually occurs seven to 10 days following a cycle of chemotherapy. Platelet count can also drop but thrombocytopenia is less common than neutropenia. Anaemia (erythrocyte count) induced by chemotherapy requires a blood transfusion — it is not appropriate to treat with iron supplements. A fall in the erythrocyte count would not be seen for six to eight weeks after administration.

It is essential to perform a full blood count before administering chemotherapy. A low neutrophil count is often the limiting factor with regard to patients receiving their chemotherapy on time. The levels at which treatments are delayed may vary from regimen to regimen and even from prescriber to prescriber but, in general, treatment should not proceed if the values are as follows:

- White cell count <3.0 x 10⁹ cells/L
- Absolute neutrophil count <1.5 x 10⁹ cells/L
- Platelet count <100 x 10⁹ cells/L

It is important to counsel patients on the risk of bone marrow suppression and the care needed to minimise infection risk. For example, in Northumbria Healthcare NHS Foundation Trust patients are advised to:

- Wash their hands before eating or preparing food and after handling animals, fresh flowers or pot plants
- Wash and peel all fruit and vegetables
- Avoid unpasteurised milk and cheese, and raw or undercooked eggs and meat
- Avoid contact with anyone who has an obvious infection and with people who have been in contact with chickenpox
- Avoid animal faces and changing nappies of recently vaccinated children

Vaccination against influenza is a good idea but patients should discuss this with their doctor, in order to time vaccination optimally in relation to their cancer treatment.

Patients are warned that if they develop a febrile illness or feel unwell with symptoms of infection, they require an immediate full blood count, checked either by their GP, hospital emergency care or chemotherapy ward. Patients presenting with the following symptoms in the community should be referred:

- A raised temperature (>38°C)
- Shivering or shak ing
- Sore throat, cough or shortness of breath
- Cystitis
- Rash, bruising or bleeding with no apparent cause

Non haematological toxicities
Assessment of non-haematological toxicities follows the US National Institutes for Health (National Cancer Institute) Common Toxicity Guidelines. These are based on grading toxicity from 0 to 4 (0=no toxicity, 4=severe). One of the key items is the patient’s performance status (“PS”), which is used to ensure patients are fit enough to continue treatment. Patients who are “PS 0” (able to carry out all normal activity) or “PS 1” (restricted in physical activity but ambulant and able to carry out light work) are usually deemed fit to proceed with treatment. Caution is needed in patients who are “PS ≥2” and above. PS2 means the patient is up and about more than 50 per cent of waking hours, capable of all self-care but unable to work. PS3 indicates a patient capable of limited self-care and up and about less than 50 per cent of waking hours, and PS4 means the patient is bed- or chair-ridden. (See the last page of this article for a summary of how other features [eg, fatigue, infection, nausea] are assessed in clinical practice.)

Dealing with side effects
Patients receiving anticancer treatments are highly likely to experience side effects and it is vital that they are provided with supportive care to help them cope. Cancer patients are likely to have a hand-held record, which contains details of their treatment and blood tests. Sometimes these records also contain charts for patients to self-assess their side effects, as well as information on avoiding infections and things to tell their doctor, and pharmacists can reinforce this advice.

National standards for ensuring quality and safe chemotherapy services require a 24-hour helpline to be available, but the current provision of this service across the UK is variable.

Fatigue
Fatigue can be one of the most distressing side effects of both anticancer therapy and cancer. Patients often have low energy levels and become easily exhausted. Some patients believe they have to keep busy but they should be encouraged to reduce their daily activities and to build in extra time to rest and recover.
rest. Light exercise may help people to feel better. Patients should also try to eat well, but this might be difficult (see below). Other tips that pharmacists can give patients with fatigue are listed in Panel 1. Most people get back to their normal energy levels between six months and a year after their chemotherapy ends.

Nausea and vomiting The action of cytotoxic drugs on the replicating cells in the lining of the gastrointestinal tract (particularly those located in the small intestine) results in the stimulation of the vagus nerve, which causes the release of various gastrointestinal hormones. These include 5-hydroxytryptamine, which stimulates 5HT3 receptors in the upper and lower small intestine, leading to nausea and vomiting. Cytotoxic drugs also directly stimulate receptors in the chemoreceptor trigger zone and higher cerebral centres in the central nervous system. Chemotherapy-induced nausea and vomiting is classifying with the following (occurring within 36 hours), delayed (beyond 36 hours) or anticipatory (before treatment).

Risk of nausea and vomiting varies with different drugs, doses and regimens, and among individuals. Effective control depends on a step-wise approach depending on the emetogenicity of the chemotherapy. Vomiting, although distressing, is more easily controlled, especially if newer anti-emetics are used in combination. Nausea is more difficult to control and can be extremely unpleasant. Anti-emetics routinely given are 5HT3 receptor antagonists: granisetron or ondansetron. Although these agents have some pharmacological differences in 5HT3 receptor affinity, selectivity and metabolism, such minor variations have not resulted in clinically significant differences. Other antiemetics used include domperidone, metoclopramide and dexamethasone.

Two new drugs launched in the past few years, palonosetron and aprepitant, are increasingly considered for resistant cases. Aprepitant acts on neurokinase-1 receptors to prevent the stimulation of the vagus nerve, which may lead to pain, discomfort and increased nausea. A high fluid intake is essential during chemotherapy. Treatment of constipation using osmotic or stimulant laxatives has been found to be most effective. In Northumbria, we have found macrogols effective (eg, Movicol oral powder, one to three sachets daily until problem resolves). Alternatively, we prescribe docusate sodium capsules or oral solution (100mg or 10ml kd). In general, no mouthwash has been proven superior for chemotherapy patients; frequent mouthwashing is considered more important than product choice. Any dentures should be cleaned morning and evening. Very hot or cold fluids should be avoided. Lip balm will help keep lips moist.

Diarrhoea Diarrhoea is a common side effect of fluoropyrimidines and EGFR targeted therapies. The usual approach for grade 1 symptoms (increase of >4 stools per day over baseline) is to treat with loperamide (4mg initially, then 2mg after each loose stool, to a maximum of 16mg in 24hrs). Many patients are given an advance supply to use as needed. Patients receiving agents that can cause diarrhoea are instructed to drink at least 2L of fluid a day. Those with diarrhoea should be advised on electrolyte replacement (eg, Dioralyte). Patients should be advised to seek medical attention if loperamide fails to resolve the problem within 48 hours. Codeine phosphate (30mg qds) may be prescribed.

In grade 2 diarrhoea there is an increase of four to six stools per day over baseline and intravenous fluids are required. Irinotecan can cause a severe early onset diarrhoea, which is part of a cholinergic reaction to the drug and is associated with sweating, hypersalivation, visual disturbances and abdominal cramps.

Constipation Other drugs (eg, ondansetron and vinca alkaloids) can cause constipation, which can lead to pain, discomfort and increased nausea. A high fluid intake is essential during chemotherapy. Treatment of constipation using osmotic or stimulant laxatives has been found to be most effective. In Northumbria, we have found macrogols effective (eg, Movicol oral powder, one to three sachets daily until problem resolves). Alternatively, we prescribe docusate sodium capsules or oral solution (100mg or 10ml kd). In general, no mouthwash has been proven superior for chemotherapy patients; frequent mouthwashing is considered more important than product choice. Any dentures should be cleaned morning and evening. Very hot or cold fluids should be avoided. Lip balm will help keep lips moist.

Diarrhoea is a common side effect of fluoropyrimidines and EGFR targeted therapies. The usual approach for grade 1 symptoms (increase of >4 stools per day over baseline) is to treat with loperamide (4mg initially, then 2mg after each loose stool, to a maximum of 16mg in 24hrs). Many patients are given an advance supply to use as needed. Patients receiving agents that can cause diarrhoea are instructed to drink at least 2L of fluid a day. Those with diarrhoea should be advised on electrolyte replacement (eg, Dioralyte). Patients should be advised to seek medical attention if loperamide fails to resolve the problem within 48 hours. Codeine phosphate (30mg qds) may be prescribed.

In grade 2 diarrhoea there is an increase of four to six stools per day over baseline and intravenous fluids are required. Irinotecan can cause a severe early onset diarrhoea, which is part of a cholinergic reaction to the drug and is associated with sweating, hypersalivation, visual disturbances and abdominal cramps.

Constipation Other drugs (eg, ondansetron and vinca alkaloids) can cause constipation, which can lead to pain, discomfort and increased nausea. A high fluid intake is essential during chemotherapy. Treatment of constipation using osmotic or stimulant laxatives has been found to be most effective. In Northumbria, we have found macrogols effective (eg, Movicol oral powder, one to three sachets daily until problem resolves). Alternatively, we prescribe docusate sodium capsules or oral solution (100mg or 10ml kd). In general, no mouthwash has been proven superior for chemotherapy patients; frequent mouthwashing is considered more important than product choice. Any dentures should be cleaned morning and evening. Very hot or cold fluids should be avoided. Lip balm will help keep lips moist.

Diarrhoea Diarrhoea is a common side effect of fluoropyrimidines and EGFR targeted therapies. The usual approach for grade 1 symptoms (increase of >4 stools per day over baseline) is to treat with loperamide (4mg initially, then 2mg after each loose stool, to a maximum of 16mg in 24hrs). Many patients are given an advance supply to use as needed. Patients receiving agents that can cause diarrhoea are instructed to drink at least 2L of fluid a day. Those with diarrhoea should be advised on electrolyte replacement (eg, Dioralyte). Patients should be advised to seek medical attention if loperamide fails to resolve the problem within 48 hours. Codeine phosphate (30mg qds) may be prescribed.

In grade 2 diarrhoea there is an increase of four to six stools per day over baseline and intravenous fluids are required. Irinotecan can cause a severe early onset diarrhoea, which is part of a cholinergic reaction to the drug and is associated with sweating, hypersalivation, visual disturbances and abdominal cramps.

Constipation Other drugs (eg, ondansetron and vinca alkaloids) can cause constipation, which can lead to pain, discomfort and increased nausea. A high fluid intake is essential during chemotherapy. Treatment of constipation using osmotic or stimulant laxatives has been found to be most effective. In Northumbria, we have found macrogols effective (eg, Movicol oral powder, one to three sachets daily until problem resolves). Alternatively, we prescribe docusate sodium capsules or oral solution (100mg or 10ml kd). In general, no mouthwash has been proven superior for chemotherapy patients; frequent mouthwashing is considered more important than product choice. Any dentures should be cleaned morning and evening. Very hot or cold fluids should be avoided. Lip balm will help keep lips moist.
Skin toxicity Skin toxicity can be a problem with fluoropyrimidines, in particular with capcitabine (Xeloda), where patients suffer with fluoropyrimidines, in particular with tetracycline antibiotics. At least 1.5L of fluid a day and sucking ice chips. Pharmacists could consider if any concurrent medicines are contributing.

Sensory neuropathy Some agents (eg, thalidomide, taxanes, platinum and vinca alkaloids) can cause peripheral neuropathy. There is no specific treatment but patients should be advised to ensure themselves that products are supported with evidence.

Alopecia Alopecia due to suppression of the hair follicles is often seen during cytotoxic therapy. Hair loss normally becomes apparent three to five weeks after starting treatment. The process is reversible and hair will grow after treatment but its colour and texture may change. Wearing a cold cap (a specially designed cap that reduces blood flow to the scalp) before, during and after chemotherapy can reduce the risk or severity of hair loss. However, cold capping is not appropriate for tumours that commonly metastasise to the scalp (eg, lymphomas).

Other advice Loss of appetite and weight loss can be a concern. Many cytotoxics alter the taste of food (eg, platinum drugs cause a metallic aftertaste) and radiotherapy on the mouth can also change taste, leading to loss of appetite. Sore mouth problems and nausea and vomiting can also contribute. Patients should be encouraged to maintain a high caloric, healthy balanced diet.

Those avoiding foods that taste strange can be advised to try them again every few weeks because taste may return to normal. If all foods seem to taste the same, strong flavours are recommended (eg, adding herbs, garlic, lemon juice and spices [although those with sore mouth should avoid spicy foods] and marinating).

Cancer patients and their carers might also seek advice on complementary products. There is little evidence to support the use of complementary medicines, such as herbal supplements, to treat cancer but patients are often keen to take something they believe will help. General advice should be to exercise caution over taking these products while receiving anticancer medicines. The Royal College of Radiologists Faculty of Clinical Oncology has issued advice to doctors on herbal and nutritional supplements and their interactions with cancer treatment. Useful points are listed in Panel 2.

Pharmacists have an important role in supporting patients receiving anticancer medicines. Part of this challenge is knowing where to access appropriate information on anticancer medicines. The British National Formulary is not the source of drug information about cancer treatments — most chemotherapy regimens are given as combinations of drugs with doses often different from those quoted (see Resources).

With the continual growth in numbers of cancer patients and recent management targets pharmacists in all sectors will be expected to contribute to the care of cancer patients and give expert advice on their medicines.

Further reading/resources

- The Royal Pharmaceutical Society has a guidance pack to help pharmacists in the early diagnosis of lung cancer. This can be accessed at www.rpharms.com.

References

7 Royal College of Radiologists. Interactions between cancer treatment and herbal and nutritional supplements and medicines: information for doctors. Available at www.rcr.ac.uk (accessed on 5 January 2011).

PRACTICE POINTS

Reading is only one way to undertake CPD and the regulator will expect to see various approaches in a pharmacist’s CPD portfolio.

1 Does your area have a 24-hour helpline for chemotherapy patients? Find out.
2 Discuss with a colleague, the questions you would ask a patient undergoing chemotherapy to assess their well-being.
3 Identify your local oncology pharmacist (all trusts treating cancer are required to have a pharmacist trained in oncology) who will be able to advise on cancer treatments and options for managing side effects.

Consider making this activity one of your nine CPD entries this year.
### CRITERIA FOR GRADING TOXICITIES OF CHEMOTHERAPY*

<table>
<thead>
<tr>
<th>Performance status</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Able to carry out normal activity without restriction</td>
<td>Restricted in physically strenuous activity but ambulant and able to carry out light work</td>
<td>Ambulant and capable of all self care but unable to work. Up and about more than 50 per cent of waking hours</td>
<td>Up and about &lt;50 per cent of waking hours</td>
<td>Completely disabled: cannot carry out any self care, totally confined to bed or chair</td>
</tr>
<tr>
<td>Fatigue</td>
<td>No symptoms</td>
<td>Mild fatigue above baseline</td>
<td>Moderate or causing difficulty performing some activities of daily living (ADL)</td>
<td>Severe fatigue interfering with ADL</td>
<td>Disabling</td>
</tr>
<tr>
<td>Infection (symptomatic or from culture)</td>
<td>No symptoms</td>
<td>No symptoms (Most infections are considered serious so are graded from level 2 upwards)</td>
<td>Localised. Local intervention indicated</td>
<td>IV antibiotic, antifungal or antiviral intervention indicated: Interventional radiology or operative intervention indicated</td>
<td>Life-threatening consequences (eg, septic shock, hypotension, acidosis, necrosis)</td>
</tr>
<tr>
<td>Nausea</td>
<td>No symptoms</td>
<td>Loss of appetite without alteration in eating habits</td>
<td>Oral intake decreased without significant weight loss, dehydration or malnutrition: IV fluids indicated for &lt;24h</td>
<td>Inadequate oral caloric or fluid intake: IV fluids, tube feeding or total parenteral nutrition (TPN) indicated for &gt;24h</td>
<td>Life-threatening consequences</td>
</tr>
<tr>
<td>Vomiting</td>
<td>No symptoms</td>
<td>One episode in 24h</td>
<td>Two to five episodes in 24h; IV fluids indicated for &lt;24h</td>
<td>&gt;5 episodes in 24h, IV fluids or TPN indicated for &gt;24h</td>
<td>Life-threatening consequences</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>No symptoms</td>
<td>Increase of &lt;4 stools/day over baseline</td>
<td>Increase of four to six stools/day over baseline: IV fluids indicated for &lt;24h</td>
<td>Increase of &gt;6 stools/day over baseline. Incontinence. IV fluids needed for &gt;24h, hospital admission.</td>
<td>Life-threatening consequences (eg, haemodynamic collapse)</td>
</tr>
<tr>
<td>Constipation</td>
<td>No symptoms</td>
<td>Occasional or intermittent symptoms. Occasional use of stool softeners, laxatives, dietary modifications or enema.</td>
<td>Persistent symptoms with regular use of laxatives or enemas indicated.</td>
<td>Symptoms interfering with ADL. Close monitoring required. May require enema or evacuation.</td>
<td>Life-threatening consequences (eg, obstruction, toxic megacolon)</td>
</tr>
<tr>
<td>Oral mucositis</td>
<td>No symptoms</td>
<td>Erythema of the mucosa. Minimal symptoms, normal diet. Minimal respiratory symptoms (ie, breathing problems) not interfering with function</td>
<td>Patchy ulceration or lesions. Symptomatic but can eat and swallow modified diet. Respiratory symptoms interfere with function but not ADL</td>
<td>Confluent ulcerations or lesions. Bleeding with minor trauma. Symptomatic and unable to eat or drink adequately. Respiratory symptoms interfere with ADL</td>
<td>Symptoms associated with life-threatening consequences</td>
</tr>
<tr>
<td>Sensory neuropathy</td>
<td>No symptoms</td>
<td>Loss of deep tendon reflexes or paraesthesia, including tingling, but not interfering with function</td>
<td>Sensory alteration or paraesthesia, including tingling, interfering with function but not interfering with ADL</td>
<td>Sensory alteration or paraesthesia interfering with ADL</td>
<td>Disabling</td>
</tr>
<tr>
<td>Hand and foot erythema</td>
<td>No symptoms</td>
<td>Minimal skin changes or dermatitis (eg, erythema without pain)</td>
<td>Skin changes (eg, peeling, blisters), bleeding oedema (feet blister, swell and bleed) or pain not interfering with function</td>
<td>Ulcerative dermatitis or skin changes with pain interfering with function</td>
<td>-</td>
</tr>
<tr>
<td>Alopecia (scalp or body)</td>
<td>No symptoms</td>
<td>Thinning or patchy</td>
<td>Complete</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*CRITERIA FOR GRADING TOXICITIES OF CHEMOTHERAPY* (adapted from Cancer Care Ontario)