

Oncology

A Implications

In the event of an influenza pandemic, patients with cancer may be more susceptible to infection and have higher levels of morbidity and mortality from infection because of the following factors:

- ▶ neutropenia and neutropenic sepsis associated with complications of chemotherapy
- ▶ impaired immune function associated with disease (haematological malignancy) or post treatment (impaired immune function up to 12 months post chemotherapy)
- ▶ loss of immunity
- ▶ disease burden relating in organ dysfunction such as pulmonary dysfunction, liver dysfunction and bone marrow dysfunction
- ▶ concomitant use of corticosteroids as an anti-emetic or for cancer-related symptoms and in some treatment regimens.

Cancer affects 1 in 4 individuals in the UK, and the prevalence increases with age. Hence there is a high prevalence of cancer in older patients, whose comorbidity may also put them at risk of significant infection both because of disease and in relation to treatment.

Patients on active treatment for cancer with systemic anti-cancer treatment (SACT), such as chemotherapy, and patients who have had SACT within the past 12 months, are already more susceptible to influenza and other viral infections and are, routinely, candidates for annual vaccinations. It is not clear whether sufficient vaccination will be possible in a pandemic, either in terms of supply or specificity of vaccine. Patients with cancer receiving SACT should be priority candidates for such vaccine as is available, as should their families.

The main issue for oncology services will be balancing the risks of interrupting treatment, or delaying the start of new treatment, against the risks of relapsing from the cancer (in the case of adjuvant treatment after surgery or radiotherapy), or dying from cancer both in relation to adjuvant treatment and for patients with established cancer. This is particularly problematic as most SACT has to be administered in hospital or in other specialist provider units, with the attendant risks in an influenza pandemic of:

- ▶ close contact with staff and other patients
- ▶ venesection and intravenous injection/infusion
- ▶ neutropenia
- ▶ neutropenic fever (requiring admission to hospital for intravenous antibiotics because of supra-added infection)
- ▶ other symptoms requiring admission to hospital which may be treatment related (eg emesis, electrolyte imbalance, diarrhoea, mucositis) or cancer related (eg electrolyte imbalance, pain, fracture, neurological dysfunction etc).

B Contingency planning: secondary care services

Outpatient activity

In the event of a pandemic, all routine follow-up appointments (usually at three-monthly, six-monthly and 12-monthly intervals) are to be deferred during the four-month 'surge' period. Patients in the follow-up phase could be followed up by telephone by tumour-site-specific clinical nurse specialists to document follow-up, outcome from influenza and new symptoms. Follow-up by telephone using tumour-site-specific clinical nurse specialists has been validated in clinical trials for some forms of cancer.

All patients requiring adjuvant treatment after presumed curative resection or radiotherapy for cancer should be considered for SACT but also considered for deferment of SACT for four months, depending on their risk of relapsing and dying from cancer and the hazard rates for such risk. For many tumours, there is no clear evidence that deferring adjuvant treatment for a few months (usually up to three months), has a negative impact on survival and in the situation of pandemic influenza, deferment of SACT for four months may be appropriate, particularly for patients at low to moderate risk of relapse. This will depend on a careful assessment of the risks and hazard rates for disease relapse and the relative and absolute benefits of treatment.

SACT should be considered for all patients who require it, provided the benefits for the individual are considered to outweigh the risks. This would include patients with curable cancers (haematological malignancy, germ cell tumours), adjuvant patients at high risk, and patients with metastatic disease for whom there is expectation of prolongation of life for more than six months.

Every effort must be made to avoid the problems associated with SACT. This will involve an increase in cost of supportive drugs as follows:

- ▶ optimal use of modern anti-emetics
- ▶ primary prophylaxis against neutropenia with granulocyte colony stimulating factors
- ▶ follow-up of patients at home after SACT by doctor or clinical nurse specialist to ascertain symptoms and minimise hospital visits
- ▶ patients and close family to be immunised against influenza
- ▶ If there is an option for oral treatment as opposed to intravenous treatment, this should be instituted even if oral treatment is more costly. This may apply to both supportive drugs and to some cytotoxic drugs.
- ▶ The simplest regimen deemed to be effective should be employed to minimise visits to hospital. This may require review of chemotherapy schedules to avoid multiple visits. In some cases, this may involve reverting to older chemotherapy schedules rather than more intensive schedules.

Priorities for inpatient admission

Inpatient admission may be necessary for patients with the following conditions:

- ▶ complex curative chemotherapy, eg germ cell tumours and haematological malignancy
- ▶ HIV malignancy and those patients undergoing bone marrow or stem cell rescue with high-dose chemotherapy (see Haematology section, p33); such individuals will require segregation
- ▶ symptoms of cancer
- ▶ complications relating to SACT.

C Communication with patients

Face-to-face contact should be kept at a minimum during an influenza pandemic, and hence alternative forms of consultation should be sought. This may include the following:

- ▶ video conferencing
- ▶ tele-conferencing
- ▶ telephone calls.

The use of telephone calls and the internet to transfer information about the risks and benefits of chemotherapy, followed up by a telephone call, should be considered. This would allow patients to consider the information available to them as far as possible, with minimal hospital visits. The benefits of treatment will need to be expressed with reference to the risks, particularly in relation to treatment-related infection during a time of pandemic influenza.

D Communication with primary care

Emergency access will still be required for acute problems related to oncology (Blue Access Card (see Appendix)). Rapid, effective communication channels with the multidisciplinary specialist team should be established.

Clinical care pathways for high-risk complications (eg neutropenia, expected infection, electrolyte imbalance, gastrointestinal disturbance) should be developed at a local level to avoid admissions to hospital whenever possible. This will in part be by the use of regimens and supportive drugs to minimise complications of treatments. This may mean using lower toxicity regimens and dose schedules (even if there is slightly lower efficacy).

Use of prophylactic antibiotics should be considered.

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