Use of oral anticancer treatments is increasing. Pharmacist-led outpatient clinics can help patients understand these medicines and ensure toxicities are detected promptly and managed appropriately

Pharmacists can help to manage tyrosine kinase inhibitor toxicities

By Simon Purcell, DipClinPharm

There have been considerable developments in the treatment of cancer over the past decade, with a notable increase in the number of oral systemic anticancer therapy (SACT) options available. Many of these oral medicines are “targeted” therapies and have novel mechanisms of action compared with traditional chemotherapy.

Tyrosine kinase inhibitors (TKIs) are one class of targeted oral SACT. In this article I describe my experiences setting up multidisciplinary clinics at Clatterbridge Cancer Centre NHS Foundation Trust (CCC) to support patients who take oral SACT.

A 2008 rapid response report from the National Patient Safety Agency — “Oral anticancer medicines: risks of incorrect dosing” — was a key driver for the development of a pharmacist-led counselling and toxicity management service at CCC.

I ran the first of these clinics for patients taking the TKI erlotinib for lung cancer. The clinic ran successfully for 18 months before use of erlotinib reduced and it was no longer feasible to continue the service. Yet the experience was not wasted: I am now working to support patients who take other oral SACTs to treat kidney cancer.

Starting with lung cancer

Over 41,000 people in the UK were diagnosed with lung cancer in 2009 making it the second most common cancer being managed. Many lung cancers are diagnosed at a late stage and so overall survival for those with the condition is poor — just 10% of patients diagnosed with lung cancer are alive five years after diagnosis, compared with over 80% of patients diagnosed with breast cancer.

Erlotinib is a TKI used as second-line therapy to treat non-small cell lung cancer. A high proportion of patients will suffer considerable toxicity when taking erlotinib. Over 70% will develop a rash (typically acneiform) and over half will develop diarrhoea. Severe adverse events occur in up to 40% of patients. Erlotinib is also associated with a number of clinically significant drug interactions, which is important since patients with lung cancer often have multiple comorbidities and are taking numerous medicines.

Traditionally, erlotinib had been given to patients in a busy “review” clinic by the oncology consultant or registrar. Because of time restrictions in the clinic, there were concerns that some patients were receiving limited information when starting erlotinib. Toxicities were often going unreported until they had developed into severe problems that were more difficult to manage.

The lead lung oncologist at CCC supported my joining the clinic team. Following a review of best practice from around the UK, local protocols and guidelines were written outlining how to manage common side effects and providing criteria for me to refer patients to the consultant. Details of the clinic are described in Box 1 (p298) and organisational challenges are described below.

Kidney cancer clinic

Using the lessons learnt from successfully running the erlotinib clinic for 18 months, the next clinic to be developed was for patients with kidney cancer being treated with oral SACT. At CCC two consultant oncologists specialise in kidney cancer — and they were highly supportive in developing my role within their clinic.

Kidney cancer is a relatively rare cancer, affecting fewer than 10,000 patients per year in the UK. Three oral SACTs are currently available for the treatment of metastatic renal cell carcinoma — sunitinib and pazopanib (multi-targeted receptor TKIs) and everolimus (an mTOR inhibitor). As for erlotinib, these drugs have novel mechanisms and cause a variety of side effects, from hypertension and hyperglycaemia to diarrhoea and stomatitis.

All patients with metastatic renal cell carcinoma are seen centrally at CCC. Patients alternate between
IN THE CLINIC

seeing the consultant or myself at each clinic appointment. At these clinics, patients are monitored for any treatment toxicities and their response to treatment is assessed. Patients are also followed up over the phone by a specialist nurse. The structure of the clinic allows for effective joint working between pharmacist, consultant and specialist nurse.

Challenges My clinic role (half a day per week) is not formally funded, and the lack of backfill to free my time from other tasks (eg, chemotherapy prescription verification and aseptic services) puts pressure on the pharmacy department. There is also no cover for annual leave.

Future developments With an even greater number of oral SACTs in clinical trials and becoming available for a wide variety of tumour groups, there is an opportunity for pharmacists to utilise their skills and expand their roles within outpatient clinics, proactively managing patients before any potential medicine-related problems occur.

The drive to treat patients closer to their homes and to deliver chemotherapy in the community may see oral SACT dispensed from community pharmacies — indeed this already happens with some private prescriptions. The role of specialist oncology pharmacists may develop to encompass education and training for pharmacists who are dispensing these medicines in the community.

In the meantime, specialist oncology clinics are an innovative, and rewarding, use of pharmacists’ knowledge. Moreover, independent prescribing is a valuable tool in delivering timely and high-quality pharmaceutical care.

I believe my skills have been well utilised in managing patients receiving oral SACT, such as TKIs.