

# 52-week results of the pharmacist contribution to a pilot counselling service for oncology patients commencing oral anticancer drugs

Reynolds, Neil<sup>1</sup>; Tong, Selina<sup>1</sup>; O'Callaghan, Barbara<sup>2</sup>; Copeland, Tandy-Sue<sup>1</sup>; Ransom, Dr David<sup>2</sup>

<sup>1</sup>Pharmacy Department, Fiona Stanley Hospital; <sup>2</sup>Department of Oncology, Fiona Stanley Hospital

## Background

- Administration of anticancer therapy orally is more convenient for patients and offers benefits to the healthcare system.
- However, the use of oral anticancer agents introduces risks to cancer therapy. Patients and/or caregivers may misinterpret instructions and inadvertently take an incorrect dose or continue therapy beyond that prescribed.<sup>1</sup>
- Fatal outcomes have been associated with patient misinterpretation of dosage instructions.<sup>2-5</sup>
- Australian guidelines recommend that:<sup>6,7</sup>
  - Oral chemotherapy is written on a designated chemotherapy chart in addition to a PBS prescription;
  - Prescriptions for oral cancer medications must be clinically verified by a pharmacist with appropriate training in cancer pharmacy prior to being dispensed;
  - Patients receiving oral anticancer agents receive counselling to enable safe and effective treatment with these agents.
- Prior to the start of this pilot, none of these recommendations were standard practice in the Cancer Centre at Fiona Stanley Hospital and patients frequently obtained oral anticancer agents from their local community pharmacy.

## Methods

- A process for a pharmacist- and nurse-led oral anticancer agent counselling clinic was developed.
- After oncologist review, a pharmacist:
  - Verified the prescription;
  - Counselled the patient on drug dosing;
  - Provided written information on the oral anticancer agents, side effects, etc.;
  - Checked their medicines for interactions.
- Patients with complex needs were seen by the Oncology Clinical Nurse Consultant (CNC).
- Patients were followed up by telephone one week after commencing treatment to ensure they were taking the correct dose and to assess any side effects.
- The service commenced in September 2017 with a pilot phase in which all patients starting oral cytotoxic chemotherapy, targeted agents and second-generation antiandrogens in selected oncologists' clinics were seen using this model.
- We present the results from the pharmacist input into the clinic for the first year of the pilot.

## References

- Carrington C. Safe use of oral cytotoxic medicines. *Aust Prescr* 2013; 36: 9-12
- Weingart S, Toro J, Spencer J, et al. Medication errors involving oral chemotherapy. *Cancer* 2010; 116: 2455-64
- Letarte N, Gabay MP, Bressler LR, et al. Analyzing temozolomide medication errors: potentially fatal. *J Neurooncol* 2014; 120: 111-5
- Holquist C, Phillips J. Fatal medication errors associated with Temodar. *Drug Topics* 2003; 7: 42
- The Institute for Safe Medication Practices. Lowdown on lomustine: we'd hate CeeNU make this mistake. ISMP Safety Alert; 2004 Jul 15
- Griffiths T, Vasileff H, on behalf of the Cancer Therapy Medication Safety Working Group. What additional safety practices should be followed when providing oral cancer therapy? 5 September 2017. Available from: [https://wiki.cancer.org.au/australia/Clinical\\_question:What\\_additional\\_safety\\_practices\\_should\\_be\\_followed\\_when\\_providing\\_oral\\_cancer\\_therapy%3F](https://wiki.cancer.org.au/australia/Clinical_question:What_additional_safety_practices_should_be_followed_when_providing_oral_cancer_therapy%3F) [Accessed 20 April 2018]
- SHPA Committee of Speciality Practice in Cancer Services. SHPA Standards of Practice for the Provision of Oral Chemotherapy for the Treatment of Cancer. *J Pharm Pract Res* 2007; 37: 149-52

## Results

- One hundred and thirty five consultations were undertaken during the 52-week pilot of which 94 were clinic attendances and 41 were telephone follow ups. Ninety-one patients were seen altogether, with three patients seen twice on separate occasions.
- The characteristics of these patients and the oral anticancer medicines/regimens prescribed are shown in table 1.
- Forty-four percent of patients received a telephone follow up by a pharmacist. Reasons for not providing this follow up was the proximity of their next medical oncology appointment, telephone follow up provided by the CNC, patient admission to the ward or patient not answering telephone.
- A number of clinically important interventions were made during the initial clinic appointment or telephone follow up, see table 2.

**Table 1:** Patient characteristics (n=91)

Age (years)	
Median (range)	67 (16-100)
Gender	
Male : Female	44 : 47
Cycle	
Median (range)	1 (1-8)
Tumour, number	
Rectal, locally advanced	17
Breast, metastatic	13
Neuroendocrine tumour	9
Renal cell carcinoma	8
Melanoma	6
Non-small cell lung cancer	6
Prostate	6
Colon, early	5
Pancreas	5
Colorectal, metastatic	4
Breast, early	2
Cholangiocarcinoma	2
Other	8
Drug/Regimen, number	
Capecitabine	29
Capecitabine / radiation	20
Pazopanib	8
Capecitabine / temozolomide	6
Dabrafenib / trametinib	6
Enzalutamide	6
Erlotinib	4
Everolimus / exemestane	3
Vinorelbine	3
Chlorambucil	2
Other	4

**Table 2:** Examples of interventions at the initial clinic appointment or telephone follow up

Patient (age)	Tumour	Drug	Intervention / Issue highlighted
Mr AR (59)	Prostate	Enzalutamide	<b>Telephone follow up:</b> Minimised treatment delay. Patient stated that he was only planning to start enzalutamide when he had finished Targin®
Mrs AW (48)	Breast, early	Capecitabine	<b>Clinic:</b> Incorrect capecitabine dose prescribed
Miss CR (24)	Neuroendocrine tumour	Capecitabine/temozolomide	<b>Clinic:</b> Unclear directions on prescription. Timing of temozolomide within cycle not stated
Mrs DP (65)	Breast, metastatic	Everolimus/exemestane	<b>Telephone follow up:</b> Early identification of side effects. Patient reported nausea since starting tablets. Supply of breakthrough antiemetic arranged through community pharmacy
Mr HS (73)	Colon, early	Capecitabine	<b>Clinic:</b> Avoided under-dosing. Insufficient tablets prescribed to complete cycle of treatment
Mrs JH (81)	Melanoma	Dabrafenib/trametinib	<b>Telephone follow up:</b> Facilitated drug supply. Patient unable to obtain supply from community pharmacy
Mrs JP (72)	Pancreas	Capecitabine	<b>Clinic:</b> Incorrect capecitabine dose prescribed
Mr PC (72)	Rectal, locally advanced	Capecitabine/radiation	<b>Clinic:</b> Avoided over-medication. Patient had not been told to omit capecitabine on Saturday and Sunday (days without radiation)
Mrs PV (82)	Neuroendocrine tumour	Capecitabine	<b>Telephone follow up:</b> Facilitated prompt cessation of drug and minimised morbidity. Patient experiencing mouth ulcers and diarrhoea. Medical team contacted, patient advised to cease capecitabine
Mr SD (50)	Rectal, locally advanced	Capecitabine/radiation	<b>Clinic:</b> Facilitated drug supply and instructed patient to start therapy. Patient seen in Kalgoorlie presented after radiation. He had not obtained capecitabine because he was not told how to take it or when to start. No medical oncology follow up booked

## Discussion

- The examples of interventions made by pharmacists in the clinic illustrate the value of pharmacist supervision of patients commencing oral anticancer therapy.
- Several interventions demonstrate the need to reinforce fundamental pieces of information such as when to start treatment.
- The incorrect doses of capecitabine were unlikely to have been identified if the prescription had been presented to a community pharmacy. In the case of the patient with early breast cancer, this would have resulted in under dosing in a patient with curable disease.
- The routine proactive telephone follow-up provides an early opportunity to identify side effects, detect poor compliance and provide support for patients managing their own anticancer therapy.
- The early identification of a patient experiencing diarrhoea and mouth ulcers allowed prompt cessation of therapy to avoid further morbidity and potentially hospitalisation.

## Conclusion

- While the number of patients seen was modest, the pilot counselling service for oncology patients illustrates the need for such a service and identified how it could be provided at the Cancer Centre at Fiona Stanley Hospital.
- The pilot raised the level of care provided to this small patient group in line with National standards and increased the safety of prescribing oral anticancer agents for the patients involved.
- We are looking to expand the clinic to further patients seen in the medical oncology department commencing oral anticancer agents.
- Scope for expansion is large and includes patients receiving oral anticancer drugs with intravenous chemotherapy, haematology patients, recipients of stem cell transplants, and patients seen in the WA Country Health Service.

**Contact:** Neil Reynolds, Senior Pharmacist, Pharmacy Department, Fiona Stanley Hospital. Email: [neil.reynolds@health.wa.gov.au](mailto:neil.reynolds@health.wa.gov.au)