What does it take to provide cancer patients with comprehensive medication therapy management services for oral chemotherapy?

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What does it take to provide cancer patients with comprehensive medication therapy management services for oral chemotherapy?

1. Introduction

Oral antineoplastic agents (OAAs) are changing how we treat cancer. OAAs provide a novel treatment option – however, with their own challenges as the OAA imatinib for the treatment of chronic myeloid leukemia (CML) showed a little over a decade ago. OAAs have altered not only how chemotherapies are administered but also how patients are managed and how they are involved in their cancer care. Where with parenteral chemotherapy patients are mainly passive recipients of their anticancer treatment, OAA requires them to be engaged actively and responsibly. Regularly scheduled, clinician-supervised chemotherapy infusions in the clinic have been replaced with regularly but differently scheduled self-administrations at home – without clinician supervision. The responsibility for correct dose, schedule, and administration has shifted to patients (and caregivers), who also have to store and handle the medication correctly and to self-observe and self-report side effects and signs of drug interactions. OAAs were to improve quality of life (QoL) – undoubtedly, in many respects their convenience has but not without new challenges.

In parallel, the role of clinicians – physicians, pharmacists, nurses, etc. – has changed. Patient education focused on information transfer is no longer sufficient – if it ever was. It needs to be complemented with teaching patients the requisite knowledge and skills about how to take and store their medication and what signs and symptoms to observe for. What clinicians believe should be communicated may not correspond to what patients have in mind. Teaching is only the first step – patients’ knowledge and skills need to be validated over time, perhaps not at each clinic visit but certainly at (individualized) intervals. With the control over when treatment is administered largely out of their hands, clinicians now need to help their patients to be adherent, to trust that they will (try to) be so, and to be vigilant about non-adherence – despite what patients claim. In the process, clinicians may forget that they are more educated than most of their patients. Clinicians need to adapt content and streamline the process of medication information consistent with their patients’ literacy in health and cancer – emphasizing reinforcement through repeat counseling, teach-back methods, and continuous individualized communication.

The need to support pharmacists is brought out clearly – not as a problem but with a solution instead – by Ribed et al.’s structured clinical interview guide (‘Guide’) proposed in this issue of the Journal.[1] Clinical pharmacists will find the Guide helpful in providing comprehensive OAA medication therapy management (MTM) during a pharmacist-led OAA clinic visit. [2] Here we expand on Ribed et al.’s work by framing their work within MTM and offering suggestions to make the Guide into an evolving method for promoting clinically effective and safe OAA therapy and achieving better patient outcomes.

2. Dosing, scheduling, handling, and administration

Seemingly, OAA dosing issues should be relatively simple, yet safety issues have become a large concern due to patients making dosing errors, being over-adherent, and not understanding drug interactions.[3–6] There have been patient deaths because key patient safety checks were not in place or patients did not understand the therapy and regimen. Recent overdoses of oral methotrexate and lomustine have drawn attention to the need for continuous clinician vigilance, patient safety checks, and patient (and caregiver) education – to avoid that patient and caregiver surmise proper dosing, make (unintended) errors, and compromise patient safety. [5,7] Further, daily, weekly, or monthly dosing schedules may be challenging to patients on combination of oral and/or parenteral regimens – again, requiring vigilance, safety checks, and education.

A key shift from clinic to home and from clinician to patient concerns storage, handling, and administration. Patients need to be informed about temperature conditions in order to maintain the physical and chemical quality of the drug and to understand that this is critical to insuring the therapeutic benefit of the OAA. Like all medications, OAAs need to be stored securely, out of reach of children, and preferably with child-resistant packaging. The correct administration needs to be explained and patients’ and caregivers’ understanding verified, with special emphasis on intake requirements.

3. Interactions and adverse events

Most OAAs are targeted and tend to have fewer side effects than traditional parenteral chemotherapy. While physicians and pharmacists should assume the primary responsibility for drug interactions, much of the burden of recognition and management of side effects are shifted to the patient.[1,4] This burden may be daunting, in part because the scope of interactions involving OAAs has not been fully mapped.[8] Consider in the regard also that often novel cancer drugs are approved rather quickly and therefore lack long-term tolerance and safety data, including data on drug-drug interactions.

4. Adherence, literacy, and quality of life

The Guide integrates these technical issues with socio-behavioral concerns. For instance, data on non-adherence to the OAA imatinib in patients with CML marked a turning point
in our fragmented understanding of adherence to OAAs [3] and challenged the idea of a rational cancer patient [9]: a cancer patient choosing to be (near-)optimally adherent to a treatment with superior efficacy, a modest side-effect profile, and significantly extending life expectancy – the alternative being interferon alfa, limited efficacy, severe side effects, and at best a few years’ survival. The future value of the Guide lies in providing triggers to pharmacists to explore these dimensions in greater detail. Importantly, a major consequence of poor medication behavior must be stressed: the unpredictable bioavailability of the drug, something akin to the concept of relative dose intensity of parenteral (systemic) chemotherapy.

Clinicians in the trenches of cancer care often complain that it is quasi-impossible to assess adherence in routine clinical practice: patient self-reports are unreliable, and perhaps clinician ratings are too; or the scales are too long and cancer patients are too distressed to complete them. The Guide is aligned, innovatively so, with emerging evidence that a single clinician query (‘have you missed any doses in the past X days’ – not how many, just ‘have you?’) or a clinician’s ‘gut feeling’ visual analog scale rating may be sufficiently accurate to predict treatment outcomes. It has been shown for hypertension, and it may merit investigating for cancer.[10]

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.[11] However, health literacy is more than (statically) assessing the degree of health literacy to then adapt care accordingly. Arguably, health literacy is dynamic: it can be improved through patient education and guidance to enhance patients’ ability to engage in shared decision-making – and to use each decision made as another learning opportunity so that patients become more health literate with every decision and engage even more in their care.

Simply defined, QoL refers to the ‘overall enjoyment of life’. [12] In cancer, we tend to find measurements of QoL and then posit them as constructs – when the inverse would be theoretically and scientifically more appropriate.[13] We navigate between narrow definitions, such as when we use performance status; or adopt generic QoL scales and generalize them to cancer; or focus on cancer-related QoL. How close are these methods to appraising patients’ overall enjoyment of life? Perhaps the next version of the Guide will just ask, considering the patients’ cancer, disease stage, treatment, adverse events, physical and emotional response, and personal strengths and dispositions, how much they ‘enjoy life with and despite cancer’.

5. Expert opinion

MTM aims to enhance the effectiveness and safety of medication therapy and thus improve patient outcomes.[2] Summarized, it includes assessing and evaluation of a patient’s health, directly or indirectly; formulating and implementing a medication treatment plan; evaluating patient response to treatment in terms of effectiveness and safety; conducting a medication review, with special attention to medication-related problems; providing patient education, training, and support; promoting patient adherence; communicating medication care to other practitioners; and integrating medication care into interdisciplinary care. The Guide proposed by Ribed et al. enables MTM in daily cancer care by providing a structured and efficient method for clinical pharmacists to interview and assess patients across, and in function of, several dimension of MTM.

The relevance of the Guide goes beyond enabling MTM as part of interdisciplinary care. The Guide may promote the broad implementation of MTM through pharmacist-led OAA clinics – the term ‘clinic’ used here in the sense of individual or group education, training, and support focused specifically on chemotherapy with oral agents.

The Guide will evolve as clinical experience accumulates across clinical settings and healthcare (financing) systems well beyond the region of origin. One scenario is that many adaptations end up being used in many locations, however without feedback and coordination. We prefer another scenario that is perhaps more in line with the Guide’s emphasis on learning: that a Collaborative emerges in which not only positive experiences but also problems, knowledge gained, adaptations made, and lessons learned are shared in order to improve the Guide.

More generally, the Guide will require updating, especially as clinical experience with the relative effectiveness and safety of OAAs grows. Key areas to monitor include the mapping of drug interactions involving OAAs; the introduction of novel OAAs with different effectiveness and safety profiles; and long-term variations in patient adherence to OAAs, especially when the disease is converted into a chronic illness. Ideally, in time the Guide will be linked to clinical management guidelines and protocols, and integrated into electronic health records, so that the streamlining in assessment enabled by the Guide can be extended (seamlessly) with clinical management. In addition to these opportunities and challenges, there is the risk of clinical pharmacists using the Guide for (quite) some time, but that uptake drops – either, negatively, because interest in formally using the Guide abates, or, more positively, the principles and methods have become part of routine clinical practice. Further, the Guide may grow in use as clinical pharmacists rise in numbers due to an expansion in general and specialty clinical residency programs. The cost of clinical pharmacists is likely to be offset by the improved patient outcomes achieved.[14,15]

In summary, the Guide provides a clinically relevant and innovative solution to managing the challenges inherent to treatment with OAAs. In the process, the Guide underscores the critical role of the clinical pharmacist in cancer care as this care evolves from parenteral administration in the clinic to oral administration at home.

Declaration of Interest

The author has no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

References

Papers of special note have been highlighted as:

• of considerable interest


- Position paper of key professional organizations on medication therapy management and its various component services.


- This document provides comprehensive clinical guidance on oral anti-cancer agents.


- This article reports evidence on the predictive utility of single-query assessments of adherence.


- Groundbreaking paper providing a meta-analysis of the effectiveness of pharmacists in the clinical team.


- Provides an economic analysis to complement the data reported in reference 14.

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