

## Case Study

### **A Woman With Metastatic Breast Cancer on an Oral Regimen: Adherence Concerns**

A.B. is a 61-year-old woman with metastatic HER2-positive breast cancer. She is a self-employed consultant and travels extensively in the United States and internationally to work with her diverse clients. She is divorced and has three adult married children. She is active, in good health, and has no comorbid conditions. A.B. was treated with adriamycin plus cyclophosphamide (AC) followed by paclitaxel plus trastuzumab in the adjuvant setting. Two years later, she recurred with symptomatic disease (pain) in the liver. First-line metastatic therapy included paclitaxel protein-bound plus trastuzumab with good response and stable disease for seven months. A.B.'s liver lesions have now increased in size and number, and there are new bilateral pulmonary lesions. Her liver enzymes are within normal limits. After discussion with her oncologist and nurse practitioner, A.B. begins an oral regimen: lapatinib plus capecitabine:

- Capecitabine 2,000 mg in two divided doses
- Lapatinib 1,250 mg in a single daily dose.

A.B. is instructed to take her oral therapies as follows:

- Capecitabine two tablets (500 mg each) twice daily for 14 days followed by a seven-day rest period
- Lapatinib five tablets (250 mg each) once daily, taken continuously.

Additional instructions given to A.B. (Genentech USA, Inc., 2010; GlaxoSmithKline, 2010)

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- Take capecitabine within 30 minutes after a meal, approximately 10–12 hours apart (breakfast and dinner)
- Take lapatinib on an empty stomach (30 minute before or one hour after eating). The nurse suggests that A.B. take lapatinib at bedtime because A.B. says she does not snack during the evening.

The nurse gives A.B. a supply of blank calendars to complete for each cycle.

SUNDAY Date	MONDAY Date	TUESDAY Date	WEDNESDAY Date	THURSDAY Date	FRIDAY Date	SATURDAY Date
		Xeloda AM Xeloda PM  Tykerb BEDTIME	Xeloda AM Xeloda PM  Tykerb BEDTIME	Xeloda AM Xeloda PM  Tykerb BEDTIME	Xeloda AM Xeloda PM  Tykerb BEDTIME	Xeloda AM Xeloda PM  Tykerb BEDTIME
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*Note.* Xeloda® is a registered trademark of Genentech. Tykerb® is a registered trademark of GlaxoSmithKline.

The nurse introduces the topic of adherence, telling A.B. that adherence means taking the medications as prescribed with respect to dose, time, and dietary intake. Nonadherence might result in the medications not working as expected or might increase side effects (ONS, 2009).

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While talking with A.B. about her new regimen, the nurse notes several issues that may affect A.B.'s adherence to her oral regimen:

- Financial: A.B. is self-employed and self-insured. She self-pays for her health insurance which has a high deductible and limited pharmaceutical benefit. She has already met the deductible for the current year.
- Fragmented schedule: A.B. travels extensively and often has to reschedule medical appointments to meet her work obligations.
- Frequent travel: A.B. often travels to Europe and Asia. Changing time zones may affect the medication schedule.

A.B. understands the nurse's instructions about how and when to take her medication. She is motivated and confident that she can make this oral regimen work for her. "I like being in charge of my care and know that I can adapt my work and travel schedule," says A.B. After reviewing possible side effects and how to contact the clinic after hours, A.B. is given prescriptions for one cycle of each medication to fill at her local retail pharmacy. The nurse also gives A.B. a listing of organizations that can help her with the cost of co-payments for her medications and offers to help her apply if A.B. finds she needs financial assistance.

Two days later, the nurse calls A.B. to confirm that she has filled her prescriptions and is taking both medications as prescribed. A.B. says she's "doing fine" and is taking the medications and has had no side effects. The nurse plans to call A.B. weekly during the first two cycles to monitor her adherence and side effects. A.B. is scheduled to come to clinic during the last few days of the capecitabine rest week (every three weeks) for an examination and toxicity

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assessment by the nurse practitioner. She will be given a new prescription for the following cycle at each visit.

A.B. does well with cycles 1 and 2. She reports that she has taken “every pill when I was supposed to.” Her computed tomography (CT) scan following cycle 2 shows a good response with a decrease in size and number of liver and pulmonary lesions. She has experienced minimal side effects, noting only mild diarrhea early in each cycle and a faint skin rash on her chin, forehead, and upper arms. Her hands and feet are slightly erythematous and dry, indicating grade 1 hand-foot syndrome. None of these side effects are significant enough to warrant dose interruption or modification, but A.B. is advised to call promptly if any of these symptoms increase in severity.

Because she is doing well and will be leaving on an extensive international trip, she is given prescriptions for two cycles of medication and a return appointment is made for six weeks.

A.B. reschedules her appointment for a few days past the original date. When she is asked about adherence to her regimen over the last two cycles, A.B. says she did not do very well.

When she got to the capecitabine rest week (week 2 of 3) of the first cycle while she was traveling, she did not continue to take the lapatinib. She states “I just forgot. I was so busy and I wasn’t in my familiar surroundings where I put the medicine bottle on my kitchen counter to remind me. I forgot all about it until I went to start the next cycle. I didn’t know what to do so I just started the next cycle but it was a couple of days late. For that cycle, I did remember to take the lapatinib every day, but I missed a few doses of capecitabine here and there. It was hard to

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remember what to take when due to the time differences, and I was eating dinner at midnight some nights.”

Although the nurse had given A.B. a diary and treatment calendar for each cycle, A.B. did not take a calendar with her on her trip. The nurse talks with A.B. about the importance of adhering to the regimen as prescribed, explaining that the results they expect with this regimen are based on clinical studies in which patients took the medicine exactly as prescribed. Taking the medicines on a different schedule, or not taking them at all, might decrease the efficacy of the medicines. Or, if medication is taken incorrectly, side effects might increase. The nurse reminds A.B. that the calendar might have reminded her to continue lapatinib and when to restart capecitabine.

A.B. and her nurse are very tech-savvy. She and the nurse find a [smartphone application](#) that will send her a text message when she is due for a dose of capecitabine or lapatinib. Because A.B.’s smartphone can be programmed to retain her home time zone, the message will come at the correct time in order to maintain her baseline dosing times. A.B. will have to keep in mind the administration instructions for both medicines—capecitabine with food; lapatinib on an empty stomach.

The NP feels that A.B. should return in three weeks rather than six weeks to ensure that she has been able to adjust her schedule to maintain optimal adherence with both medications in her regimen. She is also concerned that going back on continuous lapatinib dosing might increase the risk of side effects. A prescription is given for one cycle. The nurse reminds A.B. that the primary responsibility for adherence to an oral cancer therapy regimen remains with the patient

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and stresses the importance of maintaining the prescribed schedule for taking her medications and for seeing the NP on time. She is also due for an evaluation CT scan before her next visit, and the nurse assists her in making the radiology and return clinic appointments.

The following visit takes place as scheduled. A.B. used the Smartphone app to help her stay on track with her medication and used the calendar to remind her about the general dosing regimen. She had a slight increase in the skin rash, but it was not severe enough to warrant dose interruption. There was no change in her mild diarrhea, which she was managing with dietary changes. The CT showed further response to the regimen, and she and the NP decided she would continue. Mutually, A.B. and the nurse agreed that she should plan to return to clinic every cycle until she was sure she could manage the dosing regimen without problems.

### **Key Points**

1. Evaluate the patient's lifestyle and motivation for barriers to adherence to an oral regimen.
2. Stress the importance of adherence and how nonadherence may decrease efficacy or increase toxicity.
3. Work with the patient to modify or resolve lifestyle issues that interfere with adherence.
4. Provide tools (calendar, diary, technology) to increase adherence.
5. Prescribe only one cycle at a time until patient has a proven adherence and toxicity track record.

### **References**

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Genentech USA, Inc. (2010). Xeloda [Prescribing information]. Retrieved from

<http://www.gene.com/gene/products/information/xeloda/pdf/pi.pdf>

GlaxoSmithKline. (2010). Tykerb [Prescribing information]. Retrieved from

[http://us.gsk.com/products/assets/us\\_tykerb.pdf](http://us.gsk.com/products/assets/us_tykerb.pdf)

Oncology Nursing Society. (2009). Adherence to oral therapies for cancer: Helping your patients stay on course. Retrieved from

<http://www.ons.org/ClinicalResources/Treatment/Targeted/Toolkit>

### **General Adherence Resources**

American Cancer Society

Oral Chemotherapy: What You Need to Know. Retrieved from

[http://www.cancer.org/docroot/ETO/content/ETO\\_1\\_2x\\_Oral\\_Chemotherapy.asp](http://www.cancer.org/docroot/ETO/content/ETO_1_2x_Oral_Chemotherapy.asp)

Multinational Association of Supportive Care in Cancer

Oral Agent Teaching Tool (available in several languages)

<http://www.mascc.org/mc/page.do?sitePageId=89760>

Med Action Plan

MyMedSchedule

<http://www.medactionplan.com/medactionplan/mymedschedule.asp>

Oncology Nursing Society

Adherence to Oral Therapies for Cancer: Helping Your Patients Stay On Course Toolkit.

<http://www.ons.org/ClinicalResources/Treatment/Targeted/media/ons/docs/clinical/AdherenceToolkit/toolkit.pdf>

Winkeljohn, D. (2010). Adherence to oral cancer therapies: Nursing interventions. *Clinical Journal of Oncology Nursing*, 14, 461–466. doi:10.1188/10.CJON.461-466

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**Patient Assistance Resources**

NeedyMeds, Inc.

[www.needymeds.com](http://www.needymeds.com)

Partnership for Prescription Assistance

[www.PPARx.org](http://www.PPARx.org)

Patient Advocate Foundation

[www.patientadvocate.org](http://www.patientadvocate.org)

Patient Advocate Foundation Co-Pay Relief

[www.copays.org](http://www.copays.org)