

Molecular Oncology 101: Practical Clinical and Research Issues in Targeted Therapy of Solid Tumors

*Proceedings from a Live CME Symposium Featuring Discussion
on Breast, Colorectal, Lung and Genitourinary Cancer*



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Molecular Oncology 101: Practical Clinical and Research Issues in Targeted Therapy of Solid Tumors

A Continuing Medical Education Program

OVERVIEW OF ACTIVITY

During the past decade, the collaborative work of scientists and clinicians with diverse expertise and tumor-specific research interests has dramatically increased our understanding of the unique molecular pathways responsible for cancer-cell proliferation, survival and metastasis. This work has translated into the development of numerous biologic and molecularly targeted therapies in oncology. These agents have dramatically altered the way the oncology community approaches clinical trial design, treatment-emergent side effects, measurement of tumor-directed efficacy and the identification of patients likely to benefit from these treatments. The primary goal of this activity is to provide medical oncologists, hematologists, hematology-oncology fellows and other oncology healthcare professionals with the information they need to communicate the benefits and risks of integrating novel targeted agents into the oncologic treatment algorithm and to appropriately incorporate this knowledge into up-to-date patient care strategies.

LEARNING OBJECTIVES

- Communicate the scientific and patient-level advantages of selective cellular targeting that may be achieved through the integration of novel molecular agents into the management of solid tumors.
- Recognize the unique research and development challenges associated with the identification of effective dosing, scheduling and therapeutic duration of biologic and small-molecule antitumor agents.
- Compile evidence-based strategies to manage the distinct side effects associated with the use of novel targeted compounds.
- Distinguish the biologic rationale for concomitant versus sequential integration of cytotoxic-novel and combination-novel dual tumor targeting.
- Demonstrate knowledge of the specific molecular pathways targeted by investigational agents to inhibit the growth, development, survival or invasive action of neoplastic cells.
- Counsel appropriately selected patients on the relevance and availability of ongoing clinical studies, considering the integral role of Phase I trial participation in maximizing cancer treatment advances.

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Visit ResearchToPractice.com/MolecularOncology101

Access the faculty presentations from the live CME activity featuring discussion on practical clinical and research issues in targeted therapy of various solid tumors.



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Cancer Update
Audio Series

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Molecular Oncology 101: Practical Clinical and Research Issues in Targeted Therapy of Solid Tumors

QUESTIONS (PLEASE CIRCLE ANSWER):

1. An NCI review of Phase I trial results with approximately 12,000 adult oncology patients published in *The New England Journal of Medicine* revealed a clinical benefit rate (complete response, partial response and stable disease) of _____.
 - a. Five percent
 - b. 10 percent
 - c. 15 percent
 - d. 40+ percent
2. Endothelin-A receptor antagonists, such as atrasentan and ZD4054, may affect which of the following?
 - a. Cell growth and proliferation
 - b. Apoptosis
 - c. Angiogenesis
 - d. Osteoblastic remodeling
 - e. All of the above
3. Vandetanib (ZD6474) is a tyrosine kinase inhibitor for which of the following?
 - a. VEGFR
 - b. EGFR
 - c. RET
 - d. All of the above
4. Which of the following were demonstrated in the trial evaluating docetaxel versus gefitinib for patients with previously treated, advanced NSCLC?
 - a. Patients with EGFR mutation-positive tumors experienced a significantly longer overall survival, regardless of treatment
 - b. Among patients with EGFR mutation-positive tumors, no difference in overall survival was observed between those treated with gefitinib and those treated with docetaxel
 - c. Patients with EGFR mutation-positive tumors who were treated with gefitinib had a significantly better overall survival than those treated with docetaxel
 - d. Both a and b
5. In ECOG-E4599, evaluating carboplatin/paclitaxel with or without bevacizumab for previously untreated patients with advanced NSCLC, which dose of bevacizumab was used?
 - a. 5.0 milligrams per kilogram every three weeks
 - b. 7.5 milligrams per kilogram every three weeks
 - c. 10 milligrams per kilogram every three weeks
 - d. 15 milligrams per kilogram every three weeks
6. Safety data have been reported for NSABP trial C-08, which evaluated adjuvant FOLFOX with or without _____ for patients with colorectal cancer.
 - a. Cetuximab
 - b. Pemetrexed
 - c. Bevacizumab
7. Which of the following is not a class-based dermatologic effect of the low molecular weight EGFR inhibitors (erlotinib, gefitinib, lapatinib, cetuximab, panitumumab)?
 - a. Papulopustular rash to the upper body and face
 - b. Alopecia
 - c. Periungual/nail alterations and inflammation
 - d. Severely dry, pruritic skin
 - e. Hand-foot syndrome
8. Approximately what proportion of patients who are treated with EGFR monoclonal antibodies experience Grade III rash?
 - a. Four percent
 - b. Eight percent
 - c. 20 percent
 - d. 40 percent
9. Prophylactic treatments with tetracycline or minocycline are effective in reducing the incidence or severity of EGFR tyrosine kinase inhibitor-induced rash.
 - a. True
 - b. False
10. Data from clinical trials across multiple tumor types have definitively demonstrated that no relationship exists between drug class-specific toxicity and efficacy of biologic agents.
 - a. True
 - b. False

EDUCATIONAL ASSESSMENT AND CREDIT FORM

Molecular Oncology 101: Practical Clinical and Research Issues in Targeted Therapy of Solid Tumors

Research To Practice is committed to providing valuable continuing education for oncology clinicians, and your input is critical to helping us achieve this important goal. Please take the time to assess the activity you just completed, with the assurance that your answers and suggestions are strictly confidential.

PART ONE — Please tell us about your experience with this educational activity

BEFORE completion of this activity, how would you characterize your level of knowledge on the following topics?

4 = Very good 3 = Above average 2 = Adequate 1 = Suboptimal

Development, efficacy and side effects of agents targeting single and multiple molecular pathways	4	3	2	1
EGFR- and multikinase-associated dermatologic complications and their management	4	3	2	1
Vascular complications of anti-VEGF therapy	4	3	2	1
Rationale for vertical and/or horizontal therapeutic targeting of pathways	4	3	2	1
Clinical benefits for patients in Phase I studies	4	3	2	1

AFTER completion of this activity, how would you characterize your level of knowledge on the following topics?

4 = Very good 3 = Above average 2 = Adequate 1 = Suboptimal

Development, efficacy and side effects of agents targeting single and multiple molecular pathways	4	3	2	1
EGFR- and multikinase-associated dermatologic complications and their management	4	3	2	1
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Rationale for vertical and/or horizontal therapeutic targeting of pathways	4	3	2	1
Clinical benefits for patients in Phase I studies	4	3	2	1

Was the activity evidence based, fair, balanced and free from commercial bias?

Yes No

If no, please explain:

Will this activity help you improve patient care?

Yes No Not applicable

If no, please explain:

Did the activity meet your educational needs and expectations?

Yes No

If no, please explain:

Please respond to the following LEARNER statements by circling the appropriate selection:

4 = Yes 3 = Will consider 2 = No 1 = Already doing N/M = Learning objective not met N/A = Not applicable

As a result of this activity, I will be able to:

- Communicate the scientific and patient-level advantages of selective cellular targeting that may be achieved through the integration of novel molecular agents into the management of solid tumors. 4 3 2 1 N/M N/A
- Recognize the unique research and development challenges associated with the identification of effective dosing, scheduling and therapeutic duration of biologic and small-molecule antitumor agents. 4 3 2 1 N/M N/A
- Compile evidence-based strategies to manage the distinct side effects associated with the use of novel targeted compounds. 4 3 2 1 N/M N/A
- Distinguish the biologic rationale for concomitant versus sequential integration of cytotoxic-novel and combination-novel dual tumor targeting. 4 3 2 1 N/M N/A
- Demonstrate knowledge of the specific molecular pathways targeted by investigational agents to inhibit the growth, development, survival or invasive action of neoplastic cells. 4 3 2 1 N/M N/A
- Counsel appropriately selected patients on the relevance and availability of ongoing clinical studies, considering the integral role of Phase I trial participation in maximizing cancer treatment advances. 4 3 2 1 N/M N/A

What other practice changes will you make or consider making as a result of this activity?

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What additional information or training do you need on the activity topics or other oncology-related topics?

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EDUCATIONAL ASSESSMENT AND CREDIT FORM (continued)

Additional comments about this activity:

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As part of our ongoing, continuous quality-improvement effort, we conduct postactivity follow-up surveys to assess the impact of our educational interventions on professional practice. Please indicate your willingness to participate in such a survey.

Yes, I am willing to participate in a follow-up survey. No, I am not willing to participate in a follow-up survey.

PART TWO — Please tell us about the moderator and faculty for this educational activity

	4 = Very good	3 = Above average	2 = Adequate	1 = Suboptimal		
Faculty	Knowledge of subject matter			Effectiveness as an educator		
Mario E Lacouture, MD	4	3	2	1	4 3 2 1	
Patricia M LoRusso, DO	4	3	2	1	4 3 2 1	
Ronald B Natale, MD	4	3	2	1	4 3 2 1	
Gregory J Riely, MD, PhD	4	3	2	1	4 3 2 1	
George W Sledge Jr, MD	4	3	2	1	4 3 2 1	
Alan P Venook, MD	4	3	2	1	4 3 2 1	
Nicholas J Vogelzang, MD	4	3	2	1	4 3 2 1	
Moderator	Knowledge of subject matter			Effectiveness as an educator		
Neil Love, MD	4	3	2	1	4 3 2 1	

Please recommend additional faculty for future activities:

.....

Other comments about the moderator and faculty for this activity:

.....

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