Emerging Role of Genomic Profiling of Advanced Tumors to Aid in Treatment Selection: What Nurses Should Know

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Abstract
Emerging Role of Genomic Profiling of Advanced Tumors to Aid in Treatment Selection – What Nurses Should Know

Objective:
• Explain the role of a new genomic assay (Target Now™) in guiding oncology treatment plans.
• Describe the Target Now™ assay.
• Present a case study where Target Now™ was instrumental in the patient’s treatment plan.

Significance and Background
• Predicting effective treatments with chemotherapy or targeted agents for our patients with advanced disease or rare tumors is a common but difficult clinical problem. Target Now™ is a molecular profiling test which analyses the genetic and molecular changes unique to each person’s tumor.
• The test results predict which treatments are likely to be effective or ineffective for the individual patient by comparing test results with published clinical literature.

Interventions:
• CASE STUDY: A 52 year old female developed progressive metastatic leiomyosarcoma arising from a retroperitoneal primary following surgery. She was treated for recurrent disease with several standard chemotherapy regimens. She had an excellent performance status and requested further therapy for pulmonary and hepatic metastasis.

Patient Presentation
CASE STUDY: A 52 year old female presented with flank pain. CT scan showed a 20cm mass around the ureter.

Leiomyosarcoma
Leiomyosarcomas are rare mesenchymal tumors derived from smooth muscle cells. Higher grade tumors tend to relapse and metastasize to lungs.

CT Scan
PET Scan
She underwent extensive surgical resection of a retroperitoneal leiomyosarcoma in Jan., 2008. Tumor was Grade 2; T2b,N0,M0 with close surgical margins. She received post-op radiation therapy.

Systemic Therapy
• She was treated with MAI chemotherapy (Mesna, Adriamycin and ifosfamide) X 4 months.
• Treatment switched to Gemcitabine and Docetaxel with good response for 14 months.
• Disease progressed and treatment was switched to Sorafenib (Nexavar) with stabilization for 12 months.
• Patient was found to be ineligible for Phase 1 Clinical Trial because of a low GFR.

Patient Course
She remained well until Jan., 2009 when CT scan showed pulmonary and liver metastases (biopsied).

Target Now™ is a molecular profiling test which analyses the genetic and molecular changes unique to each person’s tumor.

What Therapy Should Be Offered Now?
• Patient had excellent performance status. She requested further therapy for pulmonary and hepatic metastases.
• A biopsy of a metastatic lesion was submitted to Caris Life Sciences (Phoenix, AZ) for Target Now™ assay. Results were available within two weeks and are shown.

Target Now™ Predicts Response or Resistance to Therapies Not Necessarily Established for the Tumor Tested.

Progressive multiple lung metastases

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Conclusions
• The tests shown above predict response of an established treatment for a particular tumor type.
• Target Now™ predicts response or resistance to therapies not necessarily established for the tumor tested.
• Both approaches are examples of steps toward achieving “personalized medicine” in the care of oncology patients.

References

Some Examples of Other Genomic Tests

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Discussion
Results reported several agents that were predicted not to be of benefit and included others which could have benefit. This allowed for a choice of temozolomide – an agent not normally used to treat sarcoma. She has tolerated this oral non-toxic agent well with stabilization of her disease.