The presentation will begin shortly

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Decision-Making Steering Committee Speaker Series

Steven J. Katz, M.D., M.P.H.

July 10, 2014
The charge for the webinar:

Help lead a discussion regarding the most challenging issues in cancer prevention, treatment and/or survival that may involve decision-making by practitioners, patients and/or caregivers
The Challenge of Individualizing Treatments for Breast Cancer

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Agenda

- Describe a clinical treatment context
- Explore challenges to communication and decision-making in that context
- Elucidate a research agenda going forward
Breast cancer treatment decision context

- Incident-episodic disease
- Virtually all of the treatments that confer lifetime benefits are initiated and largely completed in the first year of diagnosis
- Most decisions are made within the first few weeks of diagnosis
- Patients receive multi-modal therapies directed by different specialists
- Mature evidence base on management and treatment
- Cancer treatment is widely dispersed in the community
Welch et al BC incidence US
The challenge in patients with favorable prognosis

- Net benefit of treatment options is often small and difficult to formulate for individual patients
- Management and treatment options are morbid and burdensome
- Increasing recognition of potential harm if treatment is too aggressive
- Primum non nocere- *First do no harm*
- Studies underway to evaluate strategies to reduce morbidity and burden on patients
- Need to understand communication and decision-making in the exam room
Primum non nocere- first do no harm

- Surgery: Less vs more
- Radiation: Omit, less vs more
- Chemotherapy: Omit
Breakthroughs: The Impact of Personalized Medicine Today

The Big Picture 2
In the Middle of a Personalized Bridge
Beth Israel Deaconess Medical Center 11
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The Promise of Personalized Medicine
Executive Summary 45

In collaboration with PricewaterhouseCoopers
What is individualized treatment?

- Individualized care is achieved when
  - The right evaluative tests are ordered and the results are interpreted the right way
  - Treatment decisions determined by evidence-based clinical indications that address expected net benefit
  - Decision quality is high: the patient is adequately informed, satisfied with the process, and her preferences are incorporated into the decisions
Focus on the clinical encounter

- Two thirds of women report that all treatment decisions are made by the end of the first encounter.
- The encounter is intense.
  - Meeting doctors for the first time.
  - Immediate appraisal of rapport trust affinity.
  - Unstructured communication process.
  - Complex array of interconnected treatment options.
  - Increasingly complex evaluative information.
- Influencing the outcomes of these encounters is very challenging.
Challenges to the patient: Ms. Landry

- 60 yr old principal
- Abnormal mammogram
- Core biopsy:
  - invasive breast cancer,
  - low grade tumor,
  - ER positive, HER2 negative
- Surgical path: 2 cm tumor, SN negative.
Breast Cancer: distant spread or death at 10 years
Death from other causes 10% at 10 years
Invasive Breast Cancer

**Histology**

- Ductal
- Lobular
- Mixed
- Metaplastic

**Hormone Receptor Status**

- ER-positive and/or PR positive
- ER-negative and PR-negative

**HER2 Status**

- HER2 positive
- HER2 negative

**Systemic Adjuvant Treatment**

- HER2 positive
- HER2 negative

- See Systemic Adjuvant Treatment - Hormone Receptor Positive - HER2 Positive Disease (BINV-5)
- See Systemic Adjuvant Treatment - Hormone Receptor Positive - HER2 Negative Disease (BINV-6)

- HER2 positive
- HER2 negative

- See Systemic Adjuvant Treatment - Hormone Receptor Negative - HER2 Positive Disease (BINV-7)
- See Systemic Adjuvant Treatment - Hormone Receptor Negative - HER2 Negative Disease (BINV-8)

- HER2 negative
- See Systemic Adjuvant Treatment - Favorable Histologies (BINV-9)

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**Note:** All recommendations are category 2A unless otherwise indicated. Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.
Invasive Breast Cancer

SYSTEMIC ADJUVANT TREATMENT - HORMONE RECEPTOR POSITIVE - HER2 NEGATIVE DISEASE

<table>
<thead>
<tr>
<th>Tumor ≤ 0.5 cm or Microinvasive or Tumor 0.6-1.0 cm, grade 1, no unfavorable features</th>
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<tbody>
<tr>
<td>pT1, pT2, or pT3; and pN0 or pN1mi (≤ 2 mm axillary node metastasis)</td>
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- pN0 → No adjuvant therapy
- pN1mi → Consider adjuvant endocrine therapy

<table>
<thead>
<tr>
<th>Not done</th>
<th>Adjuvant endocrine therapy ± adjuvant chemotherapy (category 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider 21-gene RT-PCR assay (category 2B)</td>
<td></td>
</tr>
<tr>
<td>Low recurrence score (&lt; 18)</td>
<td>Adjacent endocrine therapy (category 2B)</td>
</tr>
<tr>
<td>Intermediate recurrence score (18-30)</td>
<td>Adjacent endocrine therapy ± adjuvant chemotherapy (category 2B)</td>
</tr>
<tr>
<td>High recurrence score (≥ 31)</td>
<td>Adjacent endocrine therapy + adjuvant chemotherapy (category 2B)</td>
</tr>
</tbody>
</table>

Histology:
- Ductal
- Lobular
- Mixed
- Metaplastic

Node positive (one or more metastases > 2 mm to one or more ipsilateral axillary lymph nodes) → Adjunct endocrine therapy + adjuvant chemotherapy (category 1)

See Adjuvant Endocrine Therapy (BINF-1) and Adjunct Chemotherapy (BINF-3).

See Principles of HER2 Testing (BINF-A).

Mixed lobular and ductal carcinoma as well as metaplastic carcinoma should be graded based on the ductal component and treated based on this grading. The metaplastic or mixed component does not alter prognosis.

Unfavorable features: angiolymphatic invasion, high nuclear grade, or high histologic grade.

If ER-positive consider endocrine therapy for risk reduction and to diminish the small risk of disease recurrence.

Evidence supports that the magnitude of benefit from surgical or radiation ovarian ablation in premenopausal women with hormone-receptor-positive breast cancer is similar to that achieved with CMF alone. Early evidence suggests similar benefits from ovarian suppression (i.e., LHRH agonist) as from ovarian ablation. The combination of ovarian suppression plus endocrine therapy may be necessary to suppress alone. The benefit of ovarian ablation/suppression in premenopausal women who have received adjuvant chemotherapy is uncertain.

Chemotherapy and endocrine therapy used as adjuvant therapy should be given sequentially with endocrine therapy following chemotherapy. The benefits of chemotherapy and of endocrine therapy are additive. However, the absolute benefit from chemotherapy may be small. The decision to add chemotherapy to endocrine therapy should be individualized, especially in those with a favorable prognosis and in women age ≥ 60 y where the incremental benefit of chemotherapy may be smaller. Available data suggest sequential or concurrent endocrine therapy with radiation therapy is acceptable.

There are insufficient data to make chemotherapy recommendations for those over 70 y old. Treatment should be individualized with consideration of comorbid conditions.

Note: All recommendations are category 2A unless otherwise indicated.

Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.
Timing of tests and treatment decisions

1. Diagnosis confirmed by biopsy
2. History, PE, Imaging
3. Initial locoreg therapy decisions
4. Final locoreg therapy decisions
5. Systemic treatment decisions

Path node and margin status
21 gene assay

Est tumor size
Clinical nodes
Comorbidity

Tumor behavior
ER/HER2

Extent of disease
Tumor biology
Host factors
Ms. Landry

Surgeon

Radiation Oncologist

Medical Oncologist

Plastic Surgeon

Other Providers
Rich research agenda: Psychology and sociology of treatment decision-making

- How well is management of breast cancer individualized?
- How are decisions made regarding tests and treatments?
- How are patient preferences constructed?
- What is the role played by informal decision support people?
- What factors influence clinician attitudes and recommendations for tests and treatments?
- What is the role of professional networks?
Implementation research agenda to improve treatment decision-making

- Are deliberation tools effective in improving the individualizing of management of care?
- What content and design is most effective?
- How do we integrate tools into clinic workflow?
- How do we leverage advances in EMR to most efficiently and effectively deploy decision support?
PRIMUM
NON
NOCERE
How are treatment decisions made?
The role of patient and clinicians
How are decisions made?
How are decisions made?

- Rational deliberation
- Intuition
- Rules
Our divided selves: Two mental systems of reasoning

- **Rider**: controls deliberative, systematic thinking; conscious higher brain functions; slower single cylinder response
- **Elephant**: controls visceral and intuitive thinking; more primitive largely subconscious lower brain function; rapid fire multi cylinder responses

Jonathan Haidt. The Happiness Hypothesis. 2007
Challenges for the rider

- Limited capacity to process information
  - Understanding known probabilities
  - Considering the interplay between likelihood and (largely imagined) consequences
  - Quantifying and processing uncertainty
- We take mental shortcuts to reduce the complexity and burden of decision-making: Heuristics and counter-factual thinking
Counter-factuals in the exam room

- Anticipated regret: I want chemotherapy because if I get a recurrence I will have done everything I could.
- Anticipated regret is a problem because people cannot predict their reactions to future events.
- Leads to more aggressive treatment decisions because it anchors on recurrence rather than net benefit of treatment.
The paradox of choice

- The more choice, the less choosing
  - Decisions require more effort
  - Mistakes are more likely and their consequences more severe
  - The more options presented, the less good we feel about the option we chose
- Autonomy is valued but easily relinquished when decisions are difficult
- Going with standards or rules makes decision-making more manageable

Barry Schwartz, The Paradox of Choice. 2004
Who sets the rules and standards?
Thank You

Questions/Comments, contact:
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