Evaluating the Cancer Patient and Tumor Markers

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September 21, 2019
Disclosures

• I have no actual or potential conflict of interest in relation to this program/presentation.
Objectives

• Review elements of focused history and physical with cancer diagnosis
• Correlate signs and symptoms of disease, treatments, and side effects
• Discuss relevant tumor markers to diagnoses
Cancer Culture Complexity

- Multiethnic
- Multicultural

- Cultural differences compounded
  - Socioeconomic factors
  - Unequal access
  - Screening
  - Optimal standard care
  - Clinical trials
  - Effective pain control
  - Adequate supportive and end-of-life care
  - Psychosocial research
  - Survivorship care
Elements of Focused History & Physical

• Chief complaint
  • Why is the patient here?
    • Cancer type
    • Treatment
    • Pertinent labs
    • Procedures or imaging since last visit

You don’t want to be surprised!

Elements of Focused History & Physical

• Atmosphere
  • Comfortable and relaxing
  • Introductions (document everyone in room)
  • Shake hands (if culturally appropriate)
  • Look at the patient

Plan

• Based on review, assessment and current treatment
  • Treat symptoms
    • Know area of typical metastasis for cancer
  • Dose adjust medications as needed
    • Grading criteria
  • Scans

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Subjective Data

• Head to toe (from last visit – need starting point
  • Chills, fevers, appetite, weight loss, fatigue
  • Eyes, nose, mouth sores, or problems swallowing
  • Dyspnea (exertional or all the time), cough, secretions, sleeping up in a chair or on pillows
  • Abnormal or rapid heart beats, heart pain, swelling
  • Nausea, vomiting, diarrhea, constipation, heartburn, gas, bloating, distention – What is the normal bowel pattern?
  • Urinary frequency, urgency, flow, nightly, color, burning or painful
  • Numbing, tingling, fingers, toes, or dizziness
  • Weakness (where), gait, assistive devices, abnormal gait
Medications

• Review medications
  • Current medications
  • Include over the counter (OTC)

• Could any recent changes account for symptoms
Physical Examination

• What do you see?
  • Eyes – Pupils, EOMI, sclera
  • Nose – drainage, sores, bleeding, perforations
  • Look at the chest, **listen** to lung sounds anterior and posteriorly
  • Heart tones **listen**, are they regular – slow – fast check all valves, murmurs, gallops, or rubs, is there a change from last visit
  • Abdomen (normal, hyper or hypo bowel sounds), soft, tender, painful (where), palpate liver
  • Motor – Ambulation (exam table or in a wheelchair). Does the patient need assistance.
  • Male and Female assessment – disease specific
Acute Findings

- Dehydration
- Acute kidney failure
- Failure to thrive
- Superior vena cava syndrome
- Deep vein thrombosis
- Pulmonary embolism
- Bleeding
Tumor Markers

- Circulating tumor markers
- Tumor tissue markers

[Image of a body with different tumor markers for various organs, such as CEA, CA19-9, CA15-3, and others, listed in the table below]

- **Esophagus**: CEA, HER2/neu, SCC
- **Bone**: BAP, Osteocalcin
- **Lungs**: CEA, SCC, NSE, Cyfra 21-1, TPA
- **Bile duct**: CA19-9, CEA, CA72-4
- **Pancreas**: CA19-9, CEA
- **Carcinoid**: 5-HIAA
- **Bladder**: NCl-G, CEA, NMP22
- **Uterus**: SCC, CEA
- **Prostate**: PSA
- **Melanoma**: S100
- **Thyroid**: Calcitonin, CEA, Thyroglobulin
- **Breast**: CA15-3, CA27.29, CEA, ER, HER2/neu, PR, Transferrin receptor, UPA, PAX-1
- **Liver**: AFP, CEA, Ferritin
- **Gastrointestinal**: CA19-9, CA72-4, CEA
- **Ovary**: AFP, CA15-3, CA125, HE4
- **Colon**: BRAF V600E, CA19-9, CEA
- **Testes**: AFP, HCGB
Tumor Marker Guidelines

- American Society Clinical Oncology (ASCO)
  - Clinical practice guidelines
    - Breast, Colorectal, Lung, and others

- National Academy of Clinical Biochemistry
  - Use of Tumor Markers in Clinical Practice: Quality Requirements
    - Appropriate use of tumor markers for specific cancers

- National Cancer Institute
  - Tumor Markers in Common Use.
Cancer Screening

- Markers
  - Sensitivity
  - Specificity

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Importance

...GREAT NEWS! YOU'RE PREGNANT!!!
New Players

• Proteomics
  • Analyze the structure, function and interactions of proteins produced by genes of a cell, tissue or organism

• Proteogenomics
  • Uses genomic and proteomic information to understand the molecular variations that lead to cancer
  • Used to identify and provide potential treatments by determining proteomic markers for tumors

• Liquid biopsies
  • Uses blood work to look for cancer cells in circulating blood by looking at DNA
  • Tumor molecular profiling without having tissue
Molecular Markers

• Diagnostic
  • Genetic and epigenetic alterations in many diseases
  • Pathways of neoplastic cells, genetic alterations, abnormality in the neoplastic transformation and mutations

• Predictive
  • Value of predicting the effectiveness of a particular targeted therapy for a specified tumor

• Companion
  • Biomarkers that are highly specific to a target or therapy
  • Test that detects the predictive biomarker to classify the tumor as responders and non-responders
Conclusion

• Important to use all tools available
• Look, listen and touch patient
• Review your data

"Hello, doc. This is the ‘hypochondriac.’
Guess where I’m calling from?"
References

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