Overview

- Provide an overview of AJCC staging
  - Background materials to explain
    - Why staging is performed
    - How staging is used
  - Broad discussion of staging
    - Classifications
      - T, N, and M categories
      - Stage group
    - Terminology differences
      - Physician manuals and patient care
      - Registry manuals and surveillance community
  - Link to additional material
    - Webinar with quiz

Learning Objectives

- Describe intent and purpose of AJCC staging
- Identify uses of AJCC staging
- Demonstrate correct usage of classifications
- Recognize basic principles of T, N, and M categories
- Recognize meaning of stage groups
- Analyze AJCC manual and physician terminology intent
- Utilize additional materials
- Evaluate self-guided learning through webinar and quiz
Lesson 1
Why Staging is Necessary and How Staging is Used

Common Language
- AJCC TNM staging is the common language of cancer
- Allows for worldwide consistency
- Essential for accurate communication
Reasons for Assigning Stage

- Discuss case with multidisciplinary cancer care team
  - Primary care physician
  - Surgeon
  - Radiologist
  - Pathologist
  - Medical Oncologist
  - Radiation Oncologist

- Choose appropriate diagnostic workup and treatment
  - Guidelines include T, N, M, and stage group criteria

- Analyze treatment results for recurrence and survival

- Data analysis of various factors stratified by stage

Role in Patient Care and Research

- Patient care – stage needed to
  - Discuss necessary diagnostic workup
  - Communicate extent of cancer with the patient
  - Describe appropriate treatment options
  - Help patient make informed decisions
  - Provide patient with their prognosis, recurrence risk and survival

- Research – stratify analysis by stage
  - Diagnostic workup
  - Treatment
  - Pathology specifics, biomarkers, other test results
  - Recurrence
  - Survival

Uses of Stage

- Patient care
  - Aids in communication between physicians for patient care
  - Provides patients with evaluation of their cancer and prognosis

- Guidelines
  - Diagnostic workup criteria
  - Stratifies patients for treatment decisions

- Research, clinical trials, and surveillance community
  - Criteria to stratify patient participation
  - Develop study arms for treatment
  - Groups patients for outcomes and survival
  - Evaluate incidence, treatment and survival
Lesson 2
Purpose of Classifications and Use

Classification

• Classification definition
  – Point in the care of cancer patient

• Classification criteria
  – Timeframe
  – Specific medical assessments and practices
  – Differences based on anatomy, histology, and biology

Purpose of Classifications

• Multiple points in the care of cancer patients
  – Identifies points in time
  – Differentiates between those points in time

• Valid data comparisons need these distinctions
  – Cannot compare patients with different classifications
Classifications and Basic Criteria

- Clinical – diagnosis, workup, until start of first treatment
- Pathologic – diagnosis, workup, definitive surgical resection operative findings, pathology report of resected specimen
- Postneoadjuvant Therapy – after neoadjuvant therapy, and after surgical resection following neoadjuvant therapy
- Retreatment – recurrence or progression
- Autopsy – postmortem exam when cancer not evident prior to death

Use of Classifications

- Compare similar timeframes between patients
- Type of information and specificity varies by classifications
  - Physical exam and imaging
  - Limited microscopic exam of tissue for diagnosis
  - Extensive microscopic exam of resected specimen
- Assess response to neoadjuvant therapy
  - Compare postneoadjuvant therapy to clinical
- Compare various points of care for a patient
  - Diagnostic workup
  - Treatment
  - Recurrence/retreatment

Lesson 3
T, N, M Categories Used to Describe the Cancer Involvement
Categories

- Categories are used to describe the cancer
- Anatomic extent or involvement by cancer is the foundation
- Additional non-anatomic factors as proven necessary
- Defined and modified based on
  - Clinical data
  - Biological properties
    - Anatomic site, tissue structure
    - Histologic type
  - Prognostic information for outcomes and survival

Category

- Refers to tumor, nodes, and metastasis
- Also refers to each of the T's, N's and M's

For example, T2 is a category

- Includes multiple criteria such as size and extent
- T2 is not considered a value
  - Value would be the size, extension, etc, that makes up the criteria
  - AJCC does not use the word “value”

T Category

- Tumor – primary tumor
- Criteria for the category include
  - Size of the cancer
  - Contiguous spread or extension
- Varies by anatomic site
- Important to understand anatomy
  - Different tissue layers of the site
  - Landmarks and named parts of the site
  - Relationship to neighboring organs and structures
N Category

• Node – regional draining lymph nodes

• Criteria for the category include
  – Presence or absence of cancer
  – Extent of cancer
  – Number of nodes involved
  – Location of nodes involved

• Varies by anatomic site

• Important to understand anatomy
  – Location of lymph nodes including ipsilateral & bilateral
  – Structure of nodes
  – Terminology: extracapsular, matted, totally replaced nodes
    where the nodal architecture is no longer evident

M Category

• Metastasis – distant metastasis

• Criteria for the category include
  – Presence or absence of cancer
  – Involvement of specific structures
  – Number of structures

• Varies by anatomic site

• Important to understand anatomy
  – How cancer spreads by vascular channels
  – Lymphatics beyond the defined regional nodes
  – Different risk based on organs involved
    – Organ structure involved – capsule vs. parenchyma

Additional Categories

• Other categories are required for some sites
  – Used with T, N, and M
  – Level of importance equal to those categories

• Categories include
  – Histology
  – Age
  – Location
  – Grade
  – Mitotic rate/count
  – Prognostic scoring index for risk factors
  – PSA
  – Gleason
  – Serum tumor markers (AFP, hCG, LDH)
  – Peripheral blood involvement
Additional Categories

Chapters utilizing additional categories

- 8. Thyroid
  - Histology, age
- 10. Esophagus & Esophagogastric Junction
  - Histology, location, grade
- 13. Appendix
  - Histology, grade
- 16. GIST
  - Mitotic rate
- 27. Bone
  - Grade
- 28. Soft Tissue Sarcoma
  - Grade
- 36. Corpus Uteri
  - Histology
- 39. Gestational Trophoblastic Tumors
  - Prognostic scoring index
- 41. Prostate
  - PSA, Gleason
- 42. Testis
  - Serum Tumor Markers (AFP, hCG, LDH)
- 57. Primary Cutaneous Lymphomas
  - Peripheral blood involvement

Purpose of Stage Groups

- Reproducible and easily communicated summary of staging information
- Patient care
  - Helps patients understand the extent of their disease
  - Communicate treatment and prognosis with patients
  - Ease of communication between physicians
- Data analysis
  - Larger numbers of similar patients
  - Statistically significant

Lesson 4
Stage Groups Put Together Cases With Similar Prognosis
Creation of Stage Groups

- Basic premise – patients with similar prognosis
- Stage group made up of these categories
  - T
  - N
  - M
  - Can include other additional categories
- Group patients with similar prognosis
  - Creates groups with specific category criteria
  - Consolidates many combinations into a few groups
- Groups may contain
  - Variance within categories, T1 N0 M0 and T2 N0 M0
  - Variance between categories, T1 N1 M0 and T2 N0 M0
  - As long as their outcomes are similar

Designation of Stage Groups

- Roman numerals I through IV
  - Higher numbers indicate increasing severity
  - 0 (zero) also used
- General meaning of stage groups, exceptions allowed
  - 0 – in situ
  - I – small tumors, less deeply invasive, negative nodes
  - II – increasing tumor and nodal extent
  - III – increasing tumor and nodal extent
  - IV – distant metastasis
- Subsets
  - Expand groupings using A, B, C
  - More refined prognostic information

Meaning of Stage Groups

- Stage groups have prognostic meaning
  - Must have statistically significant separation between stages
  - Higher number stages must have worse prognosis than lower numbers
  - Not just split of cases between numbers I through IV
  - Not just a range of better to worse and patients fit on that continuum
- All cases within group have same outcome
  - Even though their burden of disease may vary

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Changes in Stage Groups

- Category combinations moved when outcomes change
- Must maintain separation between stages for outcomes analysis
- Changes may be due to
  - Improved clinical staging techniques better define the disease
  - Improvements in treatment change prognosis in certain types of involvement, for example
    - New surgical techniques for local extent
    - New systemic drugs for nodal involvement

Lesson 5
Terminology – Difference Between Physician and Registrar

Terminology Differences

- Writing style of AJCC manual
  - Conversational
  - Journal or book style
  - Not a legal document where words are absolutely precise
  - General guidelines
  - Most common scenarios
  - Not always strict rules
  - Allow for variability seen in medical practice

- Writing style of registry manuals
  - Attribute specific meaning to words
  - Strict rules
  - Need for consistency in data collection
  - Parse words for definitive meaning
  - Definitions constructed by registry community
  - Not necessarily consistent with dictionary definitions
No Ambiguous Terminology for AJCC

- Cannot use registry ambiguous terminology lists from
  - FORDS
  - SEER manuals
  - Collaborative Stage
  - Summary Stage
  - Out of date manuals, standards
    - Cancer Program Manual 1980’s
    - Cancer Program Standards 1990’s, early 2000
    - Data Acquisition Manual (DAM)
    - Registry Operations and Data Standards (ROADS)
  - Local, state, regional, and national documentation
  - Personal memory of past use

Examples: Why NOT to Use

- Example of term definitions
  - 1996 Volume I: Cancer Program Standards defined terms
    - Must, shall, required: mandatory and acceptable
    - Should: commonly accepted, allow effective alternatives
    - May: acceptable alternative but not preferred

- If physician uses “may”
  - Do not apply definition from your memory of other manuals

- Use common sense or dictionary definition for term
  - Permission requested or granted
  - Usual or typical interpretation of the word

- If employer says “you may have the day off”
  - You should not take the day off, it is not preferred?
  - You will take the day off

Ambiguous Terms – A Secret Club

- Secret handshake that only registrars know
- No-one can join our exclusive secret club
  - Isolates registrars from medical world
  - Isolates registrars from reality

- Not in keeping with
  - Current medical practice
  - Standard dictionary definitions
  - General usage of these terms
  - Common phrasing by physicians

- Jeopardizes communication with physicians
  - Physicians are not aware of these definitions
  - Must be used by every physician worldwide for accuracy
  - Unrealistic to teach these arbitrary definitions to physicians
Ambiguous Terms Threaten Registrars

- Use of ambiguous terminology
  - Computer could identify ambiguous terminology
  - Automated data collection based on terminology
  - Replace registrar jobs
  - Threaten registrars place in the cancer team

- Value of registrars is their ability to
  - Interpret terminology
  - Understand the context
  - Decipher the meaning in light of all information
  - Perform critical thinking

- Registrars are capable – they do not need this crutch

- Using the terms can lead to wrong conclusions

Intent vs. Terminology

- Cannot use one word or one report in isolation
  - Assess intent, interpretation, perception
  - Do not over analyze or parse word choices

- Need to evaluate the whole picture
  - Reports list all abnormal findings, not just cancer involvement
  - Understand other medical causes for abnormalities
  - Look for further testing ordered to investigate

- Review
  - Consults
  - Guidelines from NCCN, ASCO, others
  - Treatment plans, which can infer stage

- Rely on physician’s medical judgment

Pragmatism

- Not practical for worldwide medical community to agree on
  - Definitions of imprecise words
  - Usage of descriptions for equivocal findings
  - Use consistent word style, not allowing variation by
    - Region of the country or world
    - Medical training
    - Personal style

- Registrars are capable of
  - Understanding the intent
  - Analyzing the information
  - Applying critical thinking
  - Deducing the physician’s conclusions
  - Asking questions of the physician when there is doubt
AJCC Terminology

- Interpretation of 7th edition writing style
  - Describes usual or common case scenario
  - Describes guidelines and best practice
  - Allows for variation seen in medical practice
  - Do not apply registry definitions

- Ambiguous terminology lists are not valid or necessary
  - CANNOT use for AJCC staging

Lesson 6
Link to AJCC Staging Curriculum
"What is Cancer Staging"

Link to Additional Material

- AJCC Staging Curriculum
  - Series of staging presentations for different audiences

- What is Cancer Staging
  - Presentation designated for cancer patients and the public

WHAT IS CANCER STAGING
Summary

• Articulate intent and purpose of AJCC staging
• Describe uses of AJCC staging
• Recognize basic principles
  – Classifications
  – T, N, and M categories
  – Stage groups
• Interpret terminology as intended
• Validate lessons
  – Additional materials
  – Webinar and quiz

Thank you

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