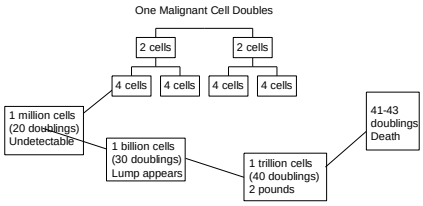
TREATMENT - *Systemic, etc.*

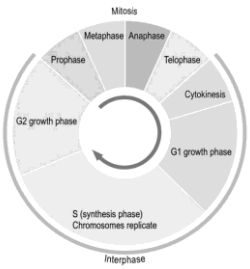
Louanne Currence, RHIT, CTR

1

Cell Growth



2



© Fleshandbones.com Davies et al: Human Physiology

Systemic Therapy

- Per FORDS definition:
  - Chemotherapy
  - Hormone
  - Immunotherapy
  - Hematologic Transplants and Endocrine Procedures

4

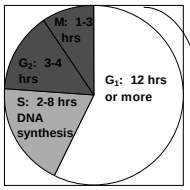
Reason No Systemic Therapy

- "00" = None, "xx"therapy was not part of the planned FCOT
  - Chemo, Hormone, Immuno, HT/E
- "not usually administered for this type and stage of cancer"
- "You would need to check with your physician on these cases"

5

Chemotherapy

Adapted from Tannock IF: Biological properties of anticancer drugs. In Tannock IF, Hill RP (eds): The Basic Science of Oncology, 2nd ed., New York, McGraw-Hill, 1992, pp 302-316.)

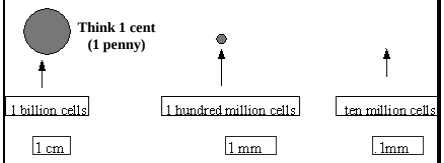


G_0 phase: Cells temporarily out of cycle or in reserve

Cell death

Nonproliferating cells

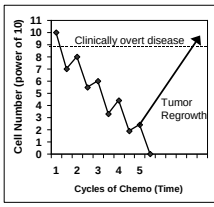
6



Adjuvant Chemotherapy by Kevin Murphy, MD

7

Tumor Cell Survival



Exponential relation between drug dose and tumor cell kill

Textbook of Clinical Oncology, 2nd ed. American Cancer Society

8

Chemotherapy Categories

- Alkylating agents such as Cytoxan and Leukeran interfere with DNA replication
- Antimetabolites change the function of enzymes used in cell metabolism and protein synthesis. -- include 5-FU and methotrexate
- Antitumor antibiotics interfere with nucleic acid (building blocks of DNA) synthesis -- Adriamycin (Doxorubicin) and bleomycin
- Alkaloids target the spindle proteins necessary for cell division, inhibiting mitosis --vincristine and vinblastine

9

Chemotherapy: Protocol / Cycles

- Protocol specifies drug(s), dose, and method of administering
- Chemotherapy regimen administered by specific schedule, cycle
- Interval of cycle, days to years
- Route of Administration doesn't matter

10

Chemotherapy: Intent of Treatment

- Induction
- Adjuvant
- Neoadjuvant
- Multimodality, Combined Modality, Concurrent Therapy
- Chemoprevention

11

Chemo Responses

- Cure macroscopic disease
- Cure microscopic disease (adj)
- Control mets, not cure
- Low or no response

12

Chemotherapy

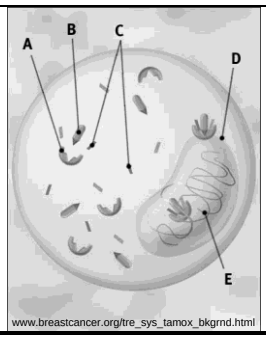
00 Not part of FCOT
01 Chemotherapy, NOS
02 Chemotherapy, single agent
03 Chemotherapy, multiple agents
82 Contraindicated – includes TOO old
85 Patient died
86 Recommended, not done, reason not noted
87 Recommended, refusal noted
88 Recommended, unk if done
99 Unk if recmd or done (no note)

13

Hormonal Therapy

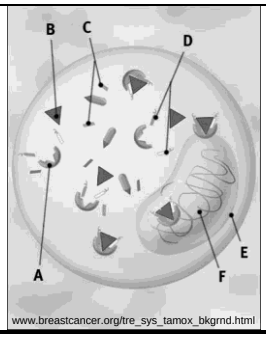
- Drugs that may affect long-term control of cancer growth
  - Usually for control, not cure
- Given with chemo or for cancer, not other medical causes

14



www.breastcancer.org/tre_sys_tamox_bkgrnd.html

A Estrogen receptor
B Estrogen
C Estrogen helper proteins
D Nucleus
E DNA genetic material



www.breastcancer.org/tre_sys_tamox_bkgrnd.html

A Estrogen receptor
B Tamoxifen
C Estrogen helper proteins
D Tamoxifen helper proteins
E Nucleus
F DNA genetic material

Major Classes of Hormones

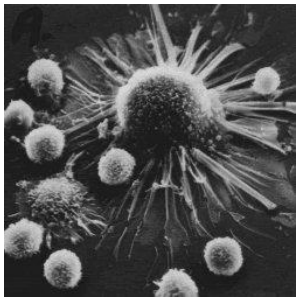
- Adrenocorticosteroids
- Estrogens
- Progestins
- Antiestrogens
- Aromatase inhibitors
- Androgens
- Antiandrogens
- Lutenizing Hormone-Releasing Hormone agonists
- LHRH Antagonists

17

Immunotherapy

- Drugs that alter immune system
  - Active immunotherapy: immunization of patient with materials to elicit an immune reaction against the tumor -- Interferon
  - Passive immunotherapy: administration of specific antibodies or activated immune cells directed toward the tumor – we code most of these as Chemo now – Rituxan, Herceptin

18



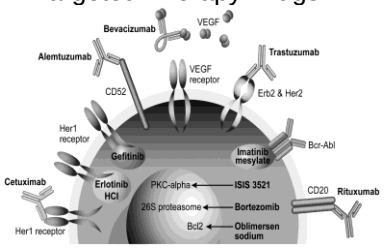
Picture found on www.cancer-info.com

Biologic Response Modifiers

- Monoclonal antibodies
- Hematopoietic growth factors – Don't code
- Cytokines
- Activated cell therapy

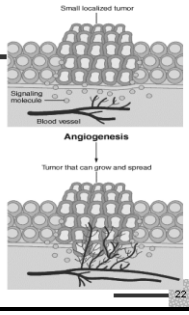
20

Targeted Therapy Drugs



Anti-Angiogenesis

- Angiogenesis brings O2 and nutrients
- Cancer cells recruit own blood supply
- > 300 angiogenesis inhibitors found
- Most in clinical trial



Picture from National Cancer Institute Website "Understanding Angiogenesis"

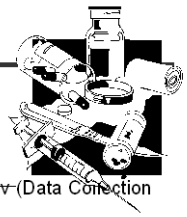
Immunotherapy

00 Not part of FCOT
01 Immuno done

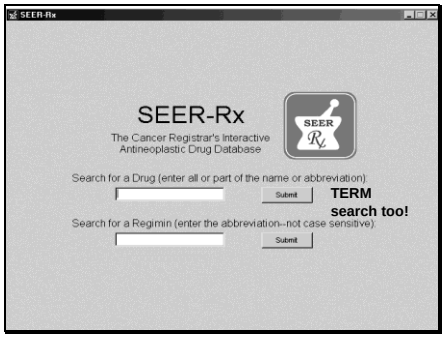
82 Contraindicated
85 Patient died

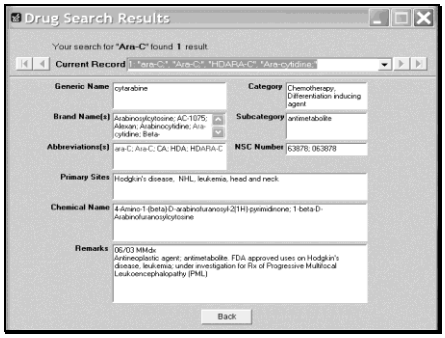
86 Recommended, not done, reason not noted
87 Recommended, refusal noted
88 Recommended, unk if done
99 Unk if recmd or done (no note)

Resources



- ~~Book 8~~
- ~~I&R~~
- ~~www.seer.cancer.gov~~ (Data Collection Tools)
- Internet
  - National Cancer Institute - http://www.cancer.gov





FCOT vs Subsequent? SEER Rx

- If chemo changed, but remains in same Category/Family, do not change course.
- Spelling counts!

27

Treatment Coding Problems

- The way treatment is documented in the record is not necessarily how it is coded by the registrar
  - Prednisone for COPD – do not code in registry
- If a patient is undergoing systemic treatment for a non-malignant condition, and then develops a cancer, do not code the systemic treatment for the cancer.
  - Methotrexate for rheumatoid arthritis – do not code in registry

28

Multiple Primaries?

- Doctor notes chemo for one primary but patient has two active primaries
  - If drug active in both primaries, record it as treatment for both
    - EX: Patient has breast cancer and myxoid chondrosarcoma. Drugs: Doxorubicin, cyclophosphamide
  - If drug not active in both, record it for one
    - EX: Patient has breast cancer and melanoma ear. Drugs Aromasin

29

Tricky case

Diagnosis:

Sequence 01: C25.0, M8140/3, Adenocarcinoma of head of pancreas

Sequence 02: C18.4, M8140/3, Adenocarcinoma of transverse colon

Treatment:

4/04 Whipple procedure

5/04 External beam radiation to pancreatic tumor bed
5-FU given as radiosensitizing agent, Gemcitabine

30

Hematologic Transplants & Endocrine *Procedures*

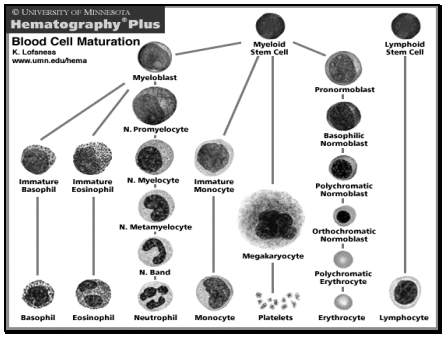
- Bone marrow transplant (BMT)
- Stem cell harvest *& infusion*
- Endocrine Surgery or RT
  - Must be bilateral to = treatment effect
- Combo of transplant w/endo procedure

31

Transplants

00 Not part of FCOT
10 BMT, NOS
11 BMT, autologous
12 BMT allogeneic
20 Stem cell harvest & Infusion
30 Endo surg or RT
40 Combine 30 + (10-20)
82 Contraindicated
85 Patient died
86 Recommended, not done, reason not noted
87 Recommended, refusal noted
88 Recommended, unk if done
99 Unk if recmd or done (no note)

32



Other Tx

- Includes treatment for reportable hematopoietic diseases
  - Supportive care, observation, phlebotomy, transfusion, aspirin
- Experimental
- Double Blind Clinical Trial
- Unproven ("nonmedical" personnel)
  - Complementary (w/usual tx)
  - Alternative (in place of usual tx)

www.quackwatch.org

34

Complimentary & Alternative Medicine

- Alternative Med Systems (Acupuncture, Homeo-pathy, Oriental)
- Energy Therapies (Qi gong, Reiki, Therapeutic touch)
- Electromagnetic (pulsed electro-magnetic fields, magnet therapy)
- Exercise (T'ai chi, yoga asanas)
- Manipulative/Body-based (Chiropractic, therapeutic massage, osteopathy, reflexology)
- Mind-body (meditation, hypnosis, art therapy, biofeedback, etc.)
- Nutritional (macrobiotics, vegetarian , supplements)
- Pharmacological (Antineoplastions , shark cartilage, laetrile, etc.)

35

Other Cancer-Directed Therapy

0 All tx coded elsewhere; no tx
1 Other done
2 Other - Experimental
3 Other - Double-blind
6 Other - Unproven therapy
7 Patient/guardian refused
8 Other therapy recommended, unknown if done
9 Unknown

36

Clinical Trials: Fact or Fiction ?

1. Once you sign, the informed consent document requires you to stay in the study until it ends.
2. Clinical trials test the safety and effectiveness of new medicines and other medical products.
3. In clinical trials, researchers always decide who gets what treatments.

37

Clinical Trials: Fact or Fiction ?

4. Researchers must decide how many people they will enroll in a clinical trial before the trials starts.
5. An Institutional Review Board is a panel of medical experts who decides whether a clinical trial deserves funding from the federal government.
6. Pharmaceutical companies, government agencies, and even individual investigators can sponsor clinical trials.

38

Clinical Trials: Fact or Fiction ?

7. Sponsors of clinical trials must pay for all injuries you receive during a study.
8. Both healthy and sick people can participate in clinical trials.
9. You need to provide informed consent only for clinical trials that last more than seven days.

WebMD

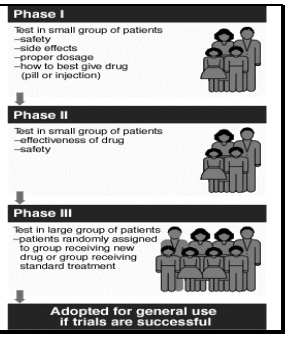
39

Protocols

- Experimental therapy
  - National protocol
  - University/hospital protocol

40

Study Phases



Palliative Coding

- 1 Surgery to alleviate symptoms
- 2 RT to alleviate symptoms
- 3 Systemic to alleviate symptoms
- 4 Pain mgmt but no other palliative
- 5 Combo 1, 2, 3 but NOT 4
- 6 Combo 1, 2, 3 with 4
- 7 Performed or referred w/no info
- 9 Unk if done

42

No Treatment

- Considered a treatment option
  - Observation only
  - No treatment arm of protocol
  - Patient/guardian refuses
  - Comorbid conditions

43

Subsequent (FU) Treatment

- Not required by COC
- Hospitals want for studies

44

A Few More Helpful Sites

CancerConsultants - http://professional.cancerconsultants.com
- Online resource center for oncology professionals. Contains links to articles on treatment advances
- Can sign up for newsletter free of charge

CA: A Journal for Clinicians - http://caonline.amcancersoc.org
- Published by American Cancer Society
- Good source of information about treatments and advances (along with many other cancer-related topics)
- Free access to full-text articles

American Society of Clinical Oncology (ASCO) - http://www.asco.org
- Society represents oncology physicians
- Free access to article abstracts and some full-text article

45