Important Notes

Diagnosis = histopathology*	
Nadir	Period when side effect of syst. chemotherapy most severe
Nadir for most of cytostatic drugs	Minimal number of leukocytes after chemotherapy that most often falls b/w 6 & 14 days
Primary prevention of febrile neutro-penia	risk of FN ≥ 20% Filgrastim (or) Filigrastin
Absorbed dose of ionizing radiation	Dose quantity which is the measure of energy deposited in matter by ionizing radiation / unit mass SI = Gray (Gy)
Monoclonal antibody drugs	Usually end in -mab
Tyrosine Kinase Inhibitors	Targeted therapy in adenocarc-inoma --> erlotinib, gefitinib, afatinib

Important Notes (cont)

WHO Analgesic Ladder	**3 Steps** Step 1: Non-opioid + optional adjuv. analgesics for mild pain Step 2: Weak opioid + non-opioid & adjuv. analgesics for mild - moderate pain Step 3: Strong opioid + non-opioid & adjuv. analgesics for moderate - severe pain

* excluding CLL, CML t(9;22), etc.

General Symptoms & Signs

Unexpl-ained pain	Skin Changes
Palor (anemia)	Fever of unknown origin
Night sweats	Jaundice

Cachexia or substantial body weight loss in short period of time (10%)

Blood Tests

CBC	**ESR, LDH, CRP**
Urine analysis	**Specific changes in typical blood parameters**
Tumor markers	FC (flow cytometry)

Tumor Markers

CEA (carci-noembr-yonic antigen)	used in colorectal ca. monitoring Not specific (lung, prostate, breast ca.) Elevated in inflam-mation
AFP (alpha-fetop-rotein)	conc. ↑ in hepato-cellular carcinomas & some testicular ca. (nonseminomas)
b-HCG (human chorionic gonado-tropin)	↑ in gestational trophoblastic neoplasia (eg: chorioncarcinoma), some ca. & embryo-nic-type tumors: neuroblastoma & nephroblastoma

Tumor Markers (cont)

CA125	In 80% of ovarian ca. Assessment of tumor mass
CA 15-3	In disseminated breast ca. , not used for monitoring
Thyreo-globulin	In papillary & follicular thyroid ca.
Calcitonin	In medullary thyroid ca.
PSA (prostate-specific antigen)	Highly specific for prostate
CA 19-9	Gastrointestinal tract ca. (not specific)

7 Cancer Warning Signals (CAUTION)

Change in bowel / bladder habits

A sore throat that does not heal

Unusual bleeding or discharge

Thickening of lump in breast or elsewhere

Indigestion / difficulties in swallowing

Obvious change in wart or mole

Nagging cough or hoarseness

This is by American Cancer Society

TNM Classification

Tumour (extent)	Nodes (region)	Metastasis (distant)
T0	N0	M0
T1	N1	M1
T2	N2	
T3	N3	
T4		
Tx - can't be assessed	Nx - can't be assessed	

cTNM - clinical
pTNM - pathological
ycTNM - treated tumours

*in pM --> only pM1 possible!

m - multiple primary tumors @ single site [eg: T2(m) T1c(5)]
aTNM - @ autopsy
rTNM - @ recurrence

V Venous invasion
L Lymphatic invasion
Pn - **Peri**neural invasion

Oncogene + Antioncogene

BRCA-1 & BRCA-2	Breast ca. , ovarian ca.
MGMT	Glioblastoma
PALB-2	Breast ca. , ovarian ca. , pancreatic ca.
RAS	lung ca. , ovarian ca. , colon ca. , etc.
EGFR	lung ca. , gliobl-astoma, breast invasive ductal ca. , colon ca.

Oncogene + Antioncogene (cont)

p-53	Li-Fraumeni syndrome breast ca. soft tissue sarcoma, osteosarcoma, brain tumors, pancreatic ca. , adrenal gland ca. , gastric ca. , colorectal ca.
DCC (deleted colorectal ca.)	cause spectrum of neurological disorders
ATM	Ataxia-Telangie-sctasia (AT) breast ca. risk, pancreatic ca. risk. ovarian ca. risk. prostate ca. , melanoma, etc.
Rb	retinoblastoma, bladder ca. , small cell lung ca.
C-SIS	gliomas
C-ERB-B	glioblastoma, breast ca.
C-ABL	chronic myeloid leukemia
C-MYC	leukemias, breast ca. , etc.

Oncogene + Antioncogene (cont)

C-BCL-2	chronic lymphocytic leukemia, malignant melanoma
NK-1	neurofibroma, pheoch-romocytoma, leukemia

Assessment Scale - ECOG

0	Fully active, able to carry on all pre-disease performance w/o restriction
1	Restricted in physically strenuous activity b/ ambulatory & able to carry out work of a light or sedentary nature eg: light house work, office work
2	Ambulatory & capable of all selfcare b/ unable to carry out any work activities. Up and about >50% of waking hours
3	Capable of only limited selfcare, confined to bed or chair >50% of waking hours
4	Completely disabled. Can't carry on any selfcare. Totally confined to bed or chair
5	Dead

Karnofsky PSS Definitions

Rating (%)	Criteria
100	Normal no complaints ; no evidence of disease
90	Able to carry on normal activity ; minor signs or symp. of disease
80	Normal activity with effort ; some signs or symp. of disease
70	Cares for self ; unable to carry on normal activity or to do active work
60	Requires occasional assistance, b/ is able to care for most of his personal needs
50	Requires considerable assistance & freq. medical care
40	Disable ; req. special care & assistance
30	Severely disabled ; hospital admission is indicated although death not imminent
20	Very sick ; hospital admission necessary ; active supportive treatment necessary
10	Moribund ; fatal processess progressing rapidly

Karnofsky PSS Definitions Rating (%) Criteria (cont)

0	Dead

100-80 --> Able to carry on normal activity & to work ; no special care needed

70-50 --> Unable to work ; able to live at home & care for most personal needs ; varying amount of assistance needed

40-0 --> Unable to care for self ; requires equivalent of institutional or hospital care ; disease may be progressing rapidly

Degree of Differentiation (G)

Degree of differentiation often relates to clinical behavior of particular tumor

Based on microscopic appearance of cancer cells, pathologists commonly describe tumor grade by 4 degrees of severity

Grade 1

> Often well-differentiated / low-grade tumors
> Generally considered least aggressive in behaviour

Grade 3/4

> Usually poorly differentiated / undifferentiated high-grade tumors
> generally most aggressive in behaviour

*Definition: Degree of abnormality of cancer cells, measure of differentiation, extent to which cancer cells are similar in appearance & func. to healthy cells of same tissue type

Phases of Clinical Trials

Phase I	First clinical trial of given agent in human being Goal: •Initial determination of safety of an agent administration •Determination of pharmacokinetic profile
Phase II	Initial trial of therapeutic efficacy •Preliminary determination of therapeutic efficacy •Determination of relationship b/w dose & effect •Cont. of phase I safety determination •If necessary modification of dosage

Phases of Clinical Trials (cont)

Phase III	Systematic trial of therapeutic effectiveness •Evaluation in randomized, multicenter clinical trial in comparison to std. therapy also in double blind trial (not applicable to anticancer drugs, b/c there is no anticancer placebo effect) •Evaluation using pt. survival time •Cont. of evaluation of adverse reactions & interaction w/ other concomitantly administered medicines *--Kaplan-Meyer survival curve--*

Phases of Clinical Trials (cont)

Phase IV	Trial performed after intro of new drug to market •New indications •New methods of administration •Combo w/ other new drugs unavailable in preregistration time •Comparison trials w/ other similar drugs

Phases of Clinical Trials (cont)	
Meta-analysis [study of studies]	Formalized, systematic review of results of available phase II & III trials (sometimes only phase III trials) on same subject Aim: •To increase precision & significance of comparable trials through data aggregation •In case of contradictory results of indiv. trials reaching common conclusion