

Important Notes		Important Notes (cont)		Blood Tests		Tumor Markers (cont)	
Diagnosis = histopathology*		WHO	3 Steps	CBC	ESR, LDH, CRP	CA125	In 80% of ovarian ca.
Nadir	Period when side effect of syst. chemotherapy most severe	Analgesic Ladder	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	Urine analysis	Specific changes in typical blood parameters		Assessment of tumor mass
<i>Nadir for most of cytostatic drugs</i>	Minimal number of leukocytes after chemotherapy that most often falls b/w 6 & 14 days			Tumor markers	FC (flow cytometry)	CA 15-3	In disseminated breast ca. , not used for monitoring
Primary prevention of febrile neutropenia	risk of FN ≥ 20% Filgrastim (or) Filgrastin			Tumor Markers		Thyreo-globulin	In papillary & follicular thyroid ca.
Absorbed dose of ionizing radiation	Dose quantity which is the measure of energy deposited in matter by ionizing radiation / unit mass SI = Gray (Gy)	* excluding CLL, CML t(9;22), etc.		CEA (carcinoembryonic antigen)	used in colorectal ca. monitoring Not specific (lung, prostate, breast ca.) Elevated in inflammation	Calcitonin	In medullary thyroid ca.
Monoclonal antibody drugs	Usually end in - mab			AFP (alpha-fetoprotein)	conc. ↑ in hepatocellular carcinomas & some testicular ca. (nonseminomas)	PSA (prostate-specific antigen)	Highly specific for prostate
Tyrosine Kinase Inhibitors	Targeted therapy in adenocarcinoma --> erlotinib, gefitinib, afatinib			b-HCG (human chorionic gonadotropin)	↑ in gestational trophoblastic neoplasia (eg: chorioncarcinoma), some ca. & embryonic-type tumors: neuroblastoma & nephroblastoma	CA 19-9	Gastrointestinal tract ca. (not specific)
		General Symptoms & Signs				7 Cancer Warning Signals (CAUTION)	
		Unexplained pain	Skin Changes			Change in bowel / bladder habits	
		Palor (anemia)	Fever of unknown origin			A sore throat that does not heal	
		Night sweats	Jaundice			Unusual bleeding or discharge	
		Cachexia or substantial body weight loss in short period of time (10%)				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			Oncogene + Antioncogene (cont)		Oncogene + Antioncogene (cont)		Karnofsky PSS Definitions Rating (%) Criteria	
Tumour (extent)	Nodes (region)	Metastasis (distant)	p-53	Li-Fraumeni syndrome	C- chronic lymphocytic leukemia, malignant		100	Normal no complaints ; no evidence of disease
T0	N0	M0		breast ca. soft tissue sarcoma, osteosarcoma,	2 melanoma		90	Able to carry on normal activity ; minor signs or symp. of disease
T1	N1	M1		brain tumors,	NK-1 neurofibroma, pheochromocytoma, leukemia		80	Normal activity with effort ; some signs or symp. of disease
T2	N2			pancreatic ca. , adrenal gland ca. , gastric ca. , colorectal ca.			70	Cares for self ; unable to carry on normal activity or to do active work
T3	N3						60	Requires occasional assistance, b/ is able to care for most of his personal needs
T4							50	Requires considerable assistance & freq. medical care
Tx - can't be assessed	Nx - can't be assessed						40	Disable ; req. special care & assistance
cTNM - clinical			DCC (deleted colorectal ca.)	cause spectrum of neurological disorders	Assessment Scale - ECOG			
pTNM - pathological			ATM	Ataxia-Telangiectasia (AT)	0 Fully active, able to carry on all pre-disease performance w/o restriction			
yCTNM - treated tumours				breast ca. risk, pancreatic ca. risk, ovarian ca. risk, prostate ca. , melanoma, etc.	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			
*in pM --> only pM1 possible!			Rb	retinoblastoma, bladder ca. , small cell lung ca.	2 Ambulatory & capable of all selfcare b/ unable to carry out any work activities. Up and about >50% of waking hours			
m - multiple primary tumors @ single site [eg: T2(m) T1c(5)]			C-SIS	gliomas	3 Capable of only limited selfcare, confined to bed or chair >50% of waking hours			
aTNM - @ autopsy			C-ERB-B	glioblastoma, breast ca.	4 Completely disabled. Can't carry on any selfcare. Totally confined to bed or chair			
rTNM - @ recurrence			C-ABL	chronic myeloid leukemia	5 Dead			
V Venous invasion			C-MYC	leukemias, breast ca. , etc.				
L Lymphatic invasion								
Pn - Perineural 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. , glioblastoma, breast invasive ductal ca. , colon ca.							



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-Meier survival curve--
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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
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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



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