

## DEFINING NEOPLASIAS

1. true
2. False
3. False
4. uncontrollable, new, autonomous, purposeful growth from a normal cell because of DNA mutations
5. the growth
6. a solid mass that is not cancer specific, used interchangeably with neoplasm
7. study of cancer
8. to change from relatively generalized to specialize, rating of semblance to tissue origin
9. it's tissue of origin.
10. Anaplastic
11. prominent nucleolus, hyperchromatism, nuclear pleomorphism
12. pleomorphism/tumor giant cells, loss of architecture/orientation, increase mitosis, metastasis
13. parenchyma "proliferating cells", supportive stroma "CT & blood vessels"
14. soft, fleshy.
15. Stroma, desmoplasia
16. epithelial, 85%.
17. Adeno
18. Oma
19. nonspecific epithelial :: surface of the skin
20. polyp
21. carcinoma
22. sarcoma
23. Leiomyoma :: angioma :: rhabdomyoma
24. Learn darn it! I know it sucks...
25. Invade, encapsulated
26. because they invade other tissues
27. melanoma, seminoma, lymphoma, dermoid cyst/teratoma, leukemia
28. potential
29. 50%, solid malignant neoplasms.
30. The prognosis/cure
31. direct seeding, lymphatic, hematogenous
32. invasive, few mitotic figures, slow/no
33. hyperplasia, metaplasia, dysplasia, tumor giant cells
34. hyperplasia → dysplasia → carcinoma in situ → malignant neoplasia
35. swelling, irritation, this role damage, compromised organ function, blood vessel damage



36. telescoping of a tissue into another tissue
37. malignant neoplasms (a systemic effect)
38. loss of fat and muscle (TNF = ↑ muscle protein breakdown & ↓ fat storage), & mobilization of protein
39. indigenous, hormone is native to the tissue
40. indigenous or ectopic :: hormone is not normally produced by that tissue
41. primary Bone neoplasm, metastasis to the bone, PTH secretion
42. paraneoplastic syndromes
43. neuromyopathic, vascular disorders, endocrinopathies
44. Cushing's syndrome (ACTH production by lung carcinoma) :: hypercalcemia (PTH via lung carcinoma)
45. long carcinoma cells elicit antibodies that cross react with neuronal endings
46. thrombosis due to increased synthesis of coagulation proteins. Induced by malignant cells
47. Trousseau Syndrome (diffuse blood clotting)

## GRADING AND STAGING

48. the degree of differentiation of tumor cells and the number of mitoses within the tumor
49. I "well diff" – II – III – IV "anaplastic"
50. size of primary neoplasm, extent of lymph node spread, presence/absence of metastasis :: (TNM system)
51. zero = none, 1=one side, 2=two on same side of diaphragm, 3=multiple lymph node involvement
52. Carcinoma in situ
53. excisions/biopsy (definitive method), needle aspiration, cytological smears (no architecture disruption)
54. immunocytochemistry, molecular identification, flow cytometry, tumor markers.
55. Although there are always present, in greater numbers during cancer
56. estrogen receptors (HER2)
57. alpha-fetoprotein (AFP)
58. carcinoembryonic antigen (CEA)
59. prostate specific antigen (PSA)
60. CA125
61. surgery, chemo, conformal radiotherapy (acute), localized radiotherapy, immunotherapy, stem cells
62. Gleason score, two 1-5 histological sites added forming 2-10
63. deviation from normal architecture and loss of complete "gland units"

## MOLECULAR BASIS OF CANCER

64. Probability of Self Renewal (.50 is no net growth, >.52 is average tumor growth)
65. ID twin of leukemic child, blooms syndrome, Hiroshima survivor, down's syndrome
66. chromosome 21 possesses the gene for WBCs & cytokines
67. true :: most are repaired

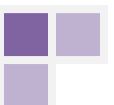


68. only non-repair genes that control cell growth, division, and differentiation will give rise to a neoplasm
69. alteration in nuclear DNA sequences
70. DNA point mutation, chromosomal translocation, gene amplification
71. Enhanced expression of a particular gene.
72. Gene protein in wrong location, ex. C where there should be a G
73. sections of two chromosomes split and combine with each other
74. environmental agents (mutagens) or mutation during normal cell metabolism (free radical, DNA error)
75. translocation/inversion of chromosomal material, deletion, additions (trisomy, repeats, amps)
76. nonlethal genetic damage, targeted regulatory genes damaged, multi-step process "tumor progression"
77. acquired or inherited.
78. Proto-oncogenes, oncogene
79. Cancer suppressor genes (growth inhibiting)
80. those involved in apoptosis, or DNA repair
81. Onco-proteins :: no important regulatory function, does not depend on growth factors
82. neoplastic growth
83. c-sis (cellular mutation within the cell), v-sis (viral transduction)
84. overexpression or increased binding capacity
85. ret (continuous activation), erb (over expression) :: continuous mitogenic signals to cell
86. tyrosine kinase and later secondary messengers
87. monoclonal antibody
88. Herceptin
89. Ras protein
90. Ras protein is in a constantly activated state (secondary messenger always working) 10-20% of cancers
91. nuclear regulatory proteins (Myc, jun, fos)
92. two-hit hypothesis, both alleles must be mutated
93. Retinoblastoma and osteosarcoma, first anti-oncogene discovered
94. Li Fraumeni syndrome (early tumor growth), guardians of the genome + most mutated of human cancers
95. breast carcinoma, effects of estrogen activity
96. colon carcinoma, Adenomatous polyposis coli
97. does not follow two-hit rule: 1 = polyp, 2 = cancer
98. Arrests G1 proteins and induces DNA repair genes, too much damage = initiates apoptosis
99. unrepaired, mutations become fixed
100. p53 (orders for it ), bcl-2 (anti-apoptotic), bax (apoptotic)
101. bcl-2
102. telomerase
103. eventual cell death



## TUMOR GROWTH

104. growth fraction or PSR
105. tumor angiogenesis
106. orderly progression from preneoplastic lesion to ultimately invasive cancer
107. Colon cancer
108. genetic instability
109. survive, grow, invade, metastasize
110. Cadherin
111. Laminin & fibronectin
112. Proteolytic enzymes
113. Cytokines
114. liver, lung, brain, **bone**.
115. Unexplained selective sites for metastasis
116. Bone.
117. Adrenals and brain
118. tumor cell adhesion molecules or secretion of chemo attractants
119. chronic inflammatory response
120. better prognosis, some cancers
121. immuno surveillance
122. TSA is tumor only specific, TAA is produced by all cells just in lower doses
123. cytotoxic T cells, natural killer cells (LAK or IL-1)
124. loss of TSA expression, carcinogens/tumor products suppressing immune, tumors killing immune cells
125. study of common factors contributing to the spread/development of the disease
126. older adults plus 55 years
127. prostate 32%, lung 16%, colorectal 12%
128. breast 32%, lung 13%, colorectal 13%
129. lung 33%, prostate 13%, colorectal 10%.
130. Lung, 23%, breast 18%, colorectal 11%
131. antibiotic usage
132. inherited cancer syndrome
133. childhood retinoblastoma
134. no consistent links to a specific mutation
135. produces products degrading p53 gene product
136. a papilloma a.k.a. wart
137. Epstein-Barr virus
138. Mononucleosis



139. B-cell apoptosis is lost
140. Burkitt's (↑ bcl-2 expression), and Hodgkin's
141. hepatocellular carcinoma :: chronic liver damage → hyperplasia → ↑ Spontaneous mutations
142. chronic gastritis, gastric carcinoma, B-cell lymphoma of the stomach
143. age, length of reproductive life, obesity, genetics, few children
144. estrogen replacement therapy
145. >4ng/ml :: benign prostatic hypertrophy, prostate carcinoma
146. treatment may result in impotence and incontinence
147. Saw palmetto (inhibits DTH), genisten (blocks GH), lycopenes (anti-oxidant)
148. bronchial metaplasia, endometrial hyperplasia, liver cirrhosis, gastritis, alterative colitis, colon adenoma
149. initiate, promote

## DISEASES OF WBC

150. liver, bone marrow.
151. Granulocytes, agranulocytes
152. lymph nodes, thymus, spleen, tonsils, adenoids, Peyer's Patch
153. b-cells in lymphoid follicles
154. t-cells
155. plasma cells and macrophages within the medullary Cords
156. decreased in white blood cells
157. increased white blood cells for non-neoplastic reasons
158. leukemia is ↑ WBCs w/ neoplastic bone marrow, lymphoma is w/ neoplastic nodal/lyphoidal tissue
159. powerful infections or chemotherapeutics leading to aplastic anemia
160. malaise, chill, fever
161. leukemia
162. acute or chronic inflammation of lymph nodes with associated pain
163. enlarged or swollen lymph nodes, but not painful
164. Lymphadenopathy occurs with/precludes Lymphadenitis, but may occur independent of Lymphadenitis
165. Based on hematopoietic stem cells type involved & state of maturity of cell presentation
166. lymphoid stem cells :: **B-cells**, t-cells
167. Myeloid stem cells :: **granulocytes**, monocytes, megakaryocytes
168. immature neoplastic cells, block in differentiation of stem cell precursor
169. abrupt onset, w/ depression of normal marrow function (fatigue, fever, bleeding, pain, organomegaly)
170. more well-differentiated with mature leukocytes, granulocytes
171. vague :: fatigue, anemia, weakness, weight loss, or organomegaly
172. when a chronic leukemia becomes acute



173. acute lymphoblastic leukemia (ALL)
174. acute myeloid leukemia (AML)
175. presence of Auer Rods and Myeloperoxidase
176. vitamin A
177. very difficult to treat and relapses frequently
178. small lymphocytic lymphoma (SLL) :: older males
179. mature lymphocytes (B cells)
180. 50% of cases enter a blast crisis
181. Philadelphia chromosome of 9 & 22 producing translocation resulting in strange gene products
182. Gleevec

