

Slide 1

Cancer Treatment - Recent Advances and Current Limitations
肿瘤治疗的最新进展及现有局限

The 2nd NY Chinese Medicine Forum
Flushing, NY
April 16, 2006

Gary Deng, MD, PhD
Integrative Medicine Service
Memorial Sloan-Kettering Cancer Center

© Gary E. Deng 2006

Slide 2

Overview

- Review common cancer treatment modalities
- Introduce recent advances in the development of new cancer therapies
- Discuss limitations and major side effects of current cancer treatment

Slide 3

Cancer Treatment

- Surgery 手术切除
- Chemotherapy 化学疗法
- Radiation therapy 放射线疗法
- Hormonal therapy 抗激素疗法
- Targeted therapy 靶向疗法
- Immunotherapy 免疫疗法
- Investigational therapies 实验性疗法

Slide 4

Surgery 手术切除

- Best chance for cure
- Not enough if cancer has spread
- Long term sequelae – scar tissue, dysfunction



Slide 5

Surgery - Advance

- Minimally invasive
 - ◆ Thorascopic
 - ◆ Laparoscopic
- Function preserving
 - ◆ Nerve sparing
 - ◆ Sphincter sparing
 - ◆ Lumpectomy/sentinel node bx



Slide 6

Chemotherapy 化疗

- Effective for cancer that has spread
- Unlikely to cure
- Development of resistance
- Many side effects – nausea, infection, neuropathy, fatigue



Slide 7

Chemotherapy - Advance

- Better efficacy with drug combinations
- Less toxic agents
- More convenient drug delivery – oral form, pump, liposomal formulation

Different chemotherapy drugs are effective during different phases of the cycle of cell growth and division.

Slide 8

Radiation Therapy 放疗

- Local treatment
- Some cancers very sensitive (e.g. testicular)
- Limited maximal dose
- Collateral damage to normal tissues (pneumonitis, xerostomia)
- Some cancers resistant

A photograph showing a patient lying on a table under a radiation therapy machine, illustrating the treatment process.

Slide 9

Radiation Therapy - Advance

- 3D Conformal RT
- Intensity Modulated RT
- Use of radioprotectant
- Use of radiosensitizer

A 3D diagram showing multiple colored beams of radiation (red, green, blue) converging on a specific area of a head and neck region, illustrating the precision of modern radiation therapy techniques.

Slide 10

Hormonal Therapy 抗激素疗法

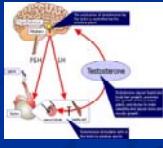
- Gentle
- Long term use
- Only for hormone sensitive cancers
- Side effects (sexual, bone)



Slide 11

Hormonal Therapy - Advance

- More drugs available
- Targeting different checkpoints



Slide 12

Targeted therapy 靶向疗法

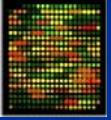
- Much less side effects
- Can have dramatic results on previously difficult to treat cancers
- Expensive
- Doesn't work on everyone



Slide 13

Targeted Therapy - Advance

- Many new drugs in the pipeline
- New targets
- Precise targeting based on DNA fingerprinting



Slide 14

Immunotherapy 免疫疗法

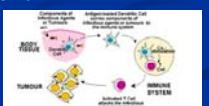
- Specificity
- Improved other treatment's efficacy
- Toxicity
- Response varies among individuals



Slide 15

Immunotherapy - Advance

- Anti-receptor antibody
- Anti-angiogenesis antibody
- Cytokine treatment
- Cancer vaccine



Slide 16

Investigational therapies 实验性疗法

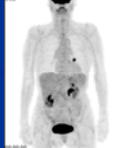
- Clinical Trials
 - ◆ To test safety and efficacy of a new therapy in humans



Slide 17

Investigational Treatment

- Better efficacy
- Fewer side effects
- Overcome resistance
- Break new ground



Slide 18



Slide 19



Slide 20

Rank	U.S. News	Reputation	Mortality	Discharge	Nurse/patient ratio	Nurse/managed care	Respiratory	Pediatr./commpy	NCI cancer	Hospice/palliative care
1.	Mayo Clinic, Rochester Cancer Center, Minn.	100.0	70.6	5.7	5,621	1.8	3.0	6	Yes	H, P
2.	University of Texas M.D. Anderson Cancer Center, Houston	69.9	69.9	5.6	3,635	1.9	3.0	5	Yes	P
3.	Johns Hopkins Hospital, Baltimore	72.4	36.2	0.56	1,369	2.2	4.8	4	7	Yes, H, P
4.	University of Wisconsin Hospital, Madison	71.3	42.0	0.61	290	1.0	No	3.0	5	Yes, H, P
5.	Mass. Gen. Hosp., Boston, Mass.	63.1	27.8	0.5	4,292	2.5	Yes	4.0	7	Yes, H, P

Slide 21



Slide 22



Slide 23

