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

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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

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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

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Surgery 手术切除

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

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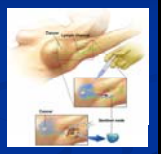
Surgery - Advance

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



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Chemotherapy 化疗

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

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Chemotherapy - Advance

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

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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

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Radiation Therapy - Advance

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

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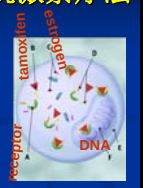
Hormonal Therapy 抗激素疗法

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



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Hormonal Therapy - Advance

- More drugs available
- Targeting different checkpoints

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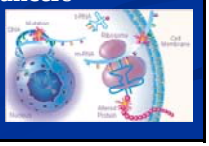
Targeted therapy 靶向疗法

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



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Targeted Therapy - Advance

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

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Immunotherapy 免疫疗法

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

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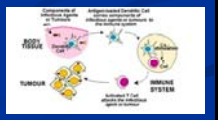
Immunotherapy - Advance

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



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Investigational therapies 实验性疗法

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

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Investigational Treatment

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

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