Follow-up Care in the Adult Survivor Setting

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National Coalition for Cancer Survivorship: Imperatives for Quality Cancer Care

- "People with histories of cancer have the right to continued medical follow-up with basic standards of care that include the specific needs of long-term survivors."

NCCS, 1996

National Coalition for Cancer Survivorship: Imperatives for Quality Cancer Care

- "Long-term survivors should have access to specialized follow-up clinics that focus on health promotion, disease prevention, rehabilitation, and identification of physiologic and psychological problems. Communication with the primary care physician must be maintained."

NCCS, 1996

Essential Components of Survivorship Care

- Prevention and detection of new cancers and recurrent cancer
- Surveillance for cancer spread, recurrence, or second cancers
- Intervention for consequences of cancer and its treatment
- Coordination between specialists and primary care physicians to ensure that all of the survivor's health needs are met

Institute of Medicine and National Research Council, 2006

Testicular Cancer: A Model for Adult Cancer Survivorship

- Most common solid tumor in men aged 15 – 35 years
- This year in U.S., approximately 8980 new cases will be diagnosed
- Most patients are cured and become long-term survivors
- Late sequelae have been documented

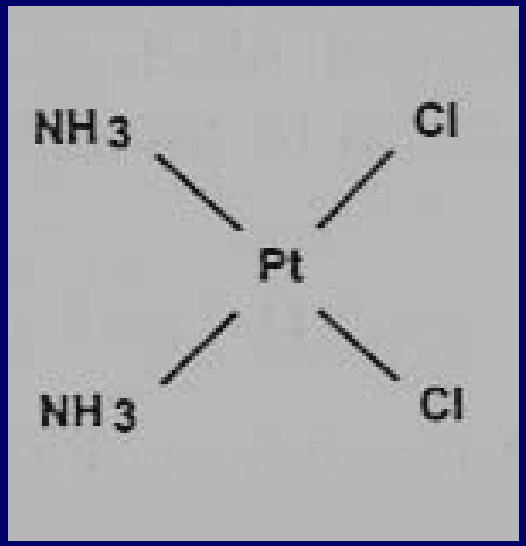

I AM LANCE.
I LIVE STRONG.

Testicular Cancer
SEER Incidence and U.S. Mortality, 1973-1995

Age-adjusted to 1970 Standard

SEER Cancer Statistics Review 1973-1995 National Cancer Institute

Why Has TC Mortality Decreased?



***cis*-diamminedichloroplatinum (II)**
Cisplatin

Late Sequelae of TC and Treatment

- Physiological late effects
- Second neoplasms
- Psychosocial late effects

Standardized Mortality Ratios in Long-Term TC Survivors

- 3378 TC survivors, age ≤ 55 years (1962-1997)
- Results:

Cardiovascular	SMR 1.2, 95% CI 1.0-1.5
Benign GI	SMR 2.1, 95% CI 1.1-3.5
Malignancy	SMR 2.0, 95% CI 1.7-2.4

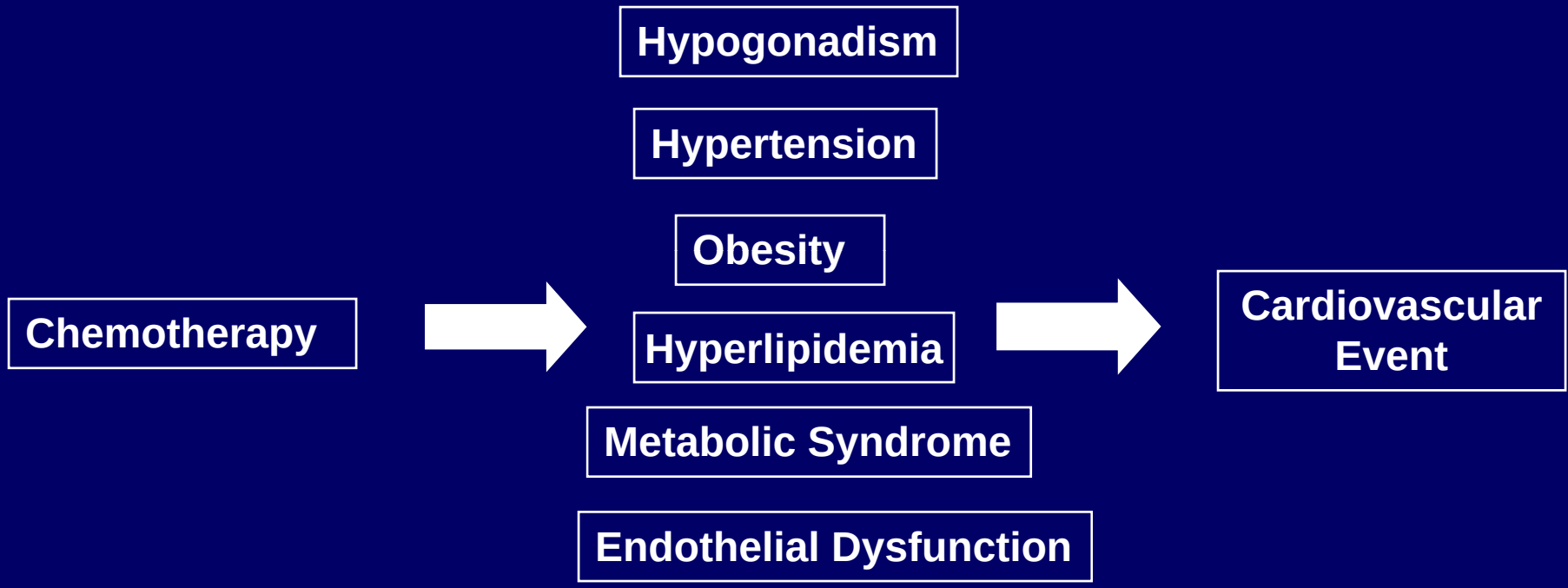
Fossa, Br J Cancer, 2004

Cardiovascular Disease in Long-Term TC Survivors

- 2,512 5-year TC survivors (1965-1995)
- After median follow-up of 18.4 years, 694 CV events, 141 acute MI
- Standardized incidence ratio 1.17 (95% CI, 1.04-1.31)
- Mediastinal radiation, PVB chemotherapy, smoking associated with increased SIR

Van den Belt-Dusebout, J Clin Oncol, 2006

TC Chemotherapy and Cardiovascular Risk



Second Neoplasms

- Treatment-related cancers
  - Radiation-induced solid tumors
  - Etoposide-induced leukemia
- Contralateral germ cell tumor
- Late relapse
- Dysplastic nevi/melanoma

Second Solid Cancers Among TC Survivors

- 40,576 men (≥ 1 year); 14 population-based tumor registries; 2285 second solid cancers

Treatment Modality	Relative Risk
Radiotherapy	2.0 (95% CI, 1.9-2.2)
Chemotherapy	1.8 (95% CI, 1.3-2.5)
Both	2.9 (95% CI, 1.9-4.2)

Travis, et al. J Natl Cancer Inst, 2005

Late Relapse of TC

- Definition: relapse following a disease-free interval of ≥ 2 years in absence of second primary tumor
- 2 - 4% of patients have late relapse
- Survival of late relapse only 30 – 40%
- Surgery is the primary treatment
- Proposed biology: derived from residual mature teratoma
- Patients require life-long monitoring

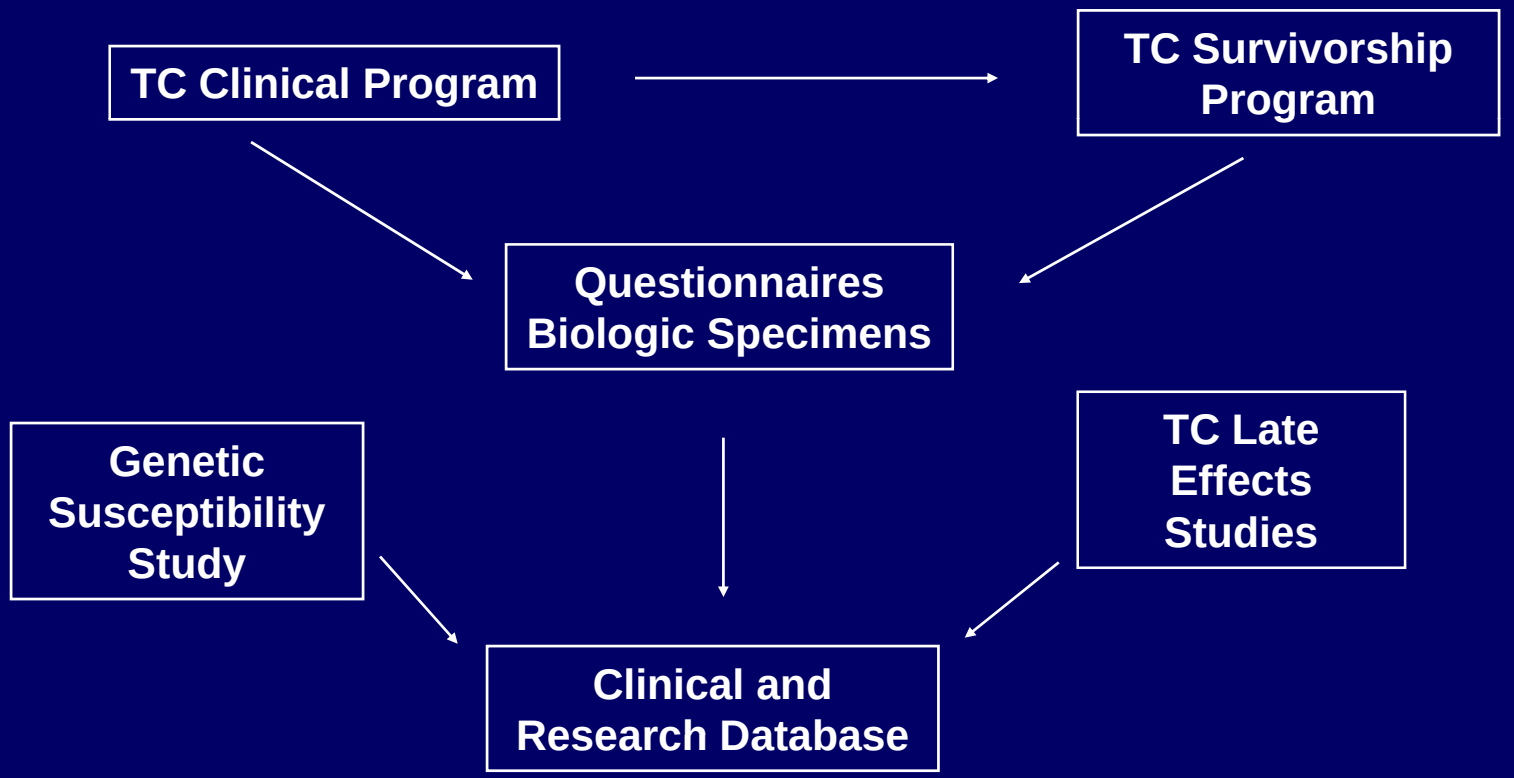
Carver, et al. Urol Oncol, 2005

QOL in Long-term TC Survivors

- 1,409 TC survivors, mean 11 years of follow-up (1980 -1994)
- Controls 2,678 males general population
- QOL (Short Form 36) and TC-related stress (Impact of Event Scale)
- No significant differences demonstrated
- QOL influenced by self-reported side effects and TC-related stress, but not treatment modality
- Association between self-reported side effects and TC-related stress

Fossa, et al. J Clin Oncol, 2005

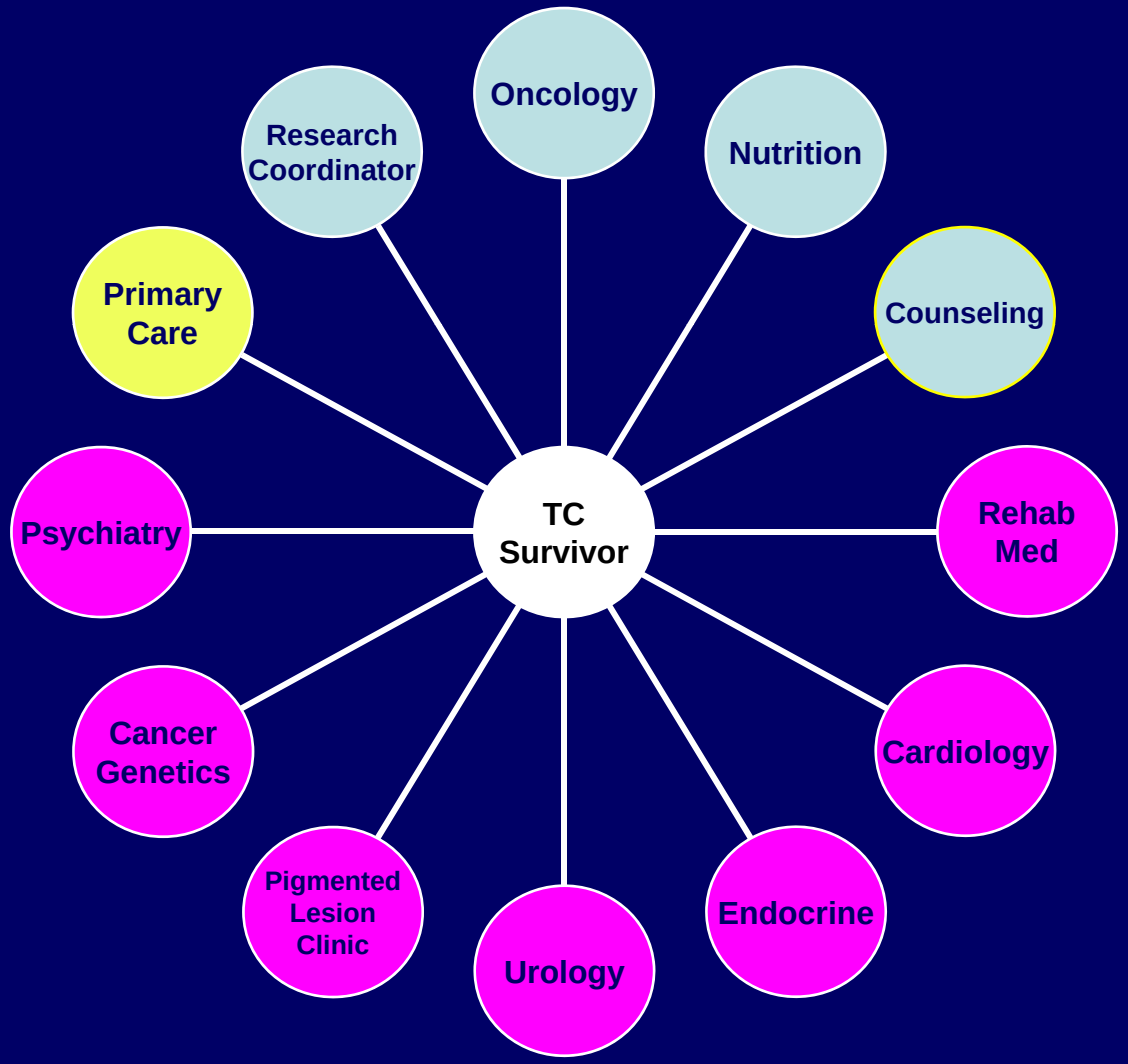
Penn Testicular Cancer Program



LAF Living Well After Cancer TC Survivorship Program

- Specialized center of clinical care, research, and education for TC survivors
- Most patients come from Penn, but also referrals from Tri-state region
- To date, we have 234 TC survivors who are ≥ 2 years from diagnosis

LAF LWAC TC Team



What Happens at a Visit?

- Detailed chart abstraction
- Comprehensive history and physical examination
- Laboratory testing including lipid analysis, hormone levels, and tumor markers
- Radiographic studies as indicated
- Same day consultation with nutritionist, counselor

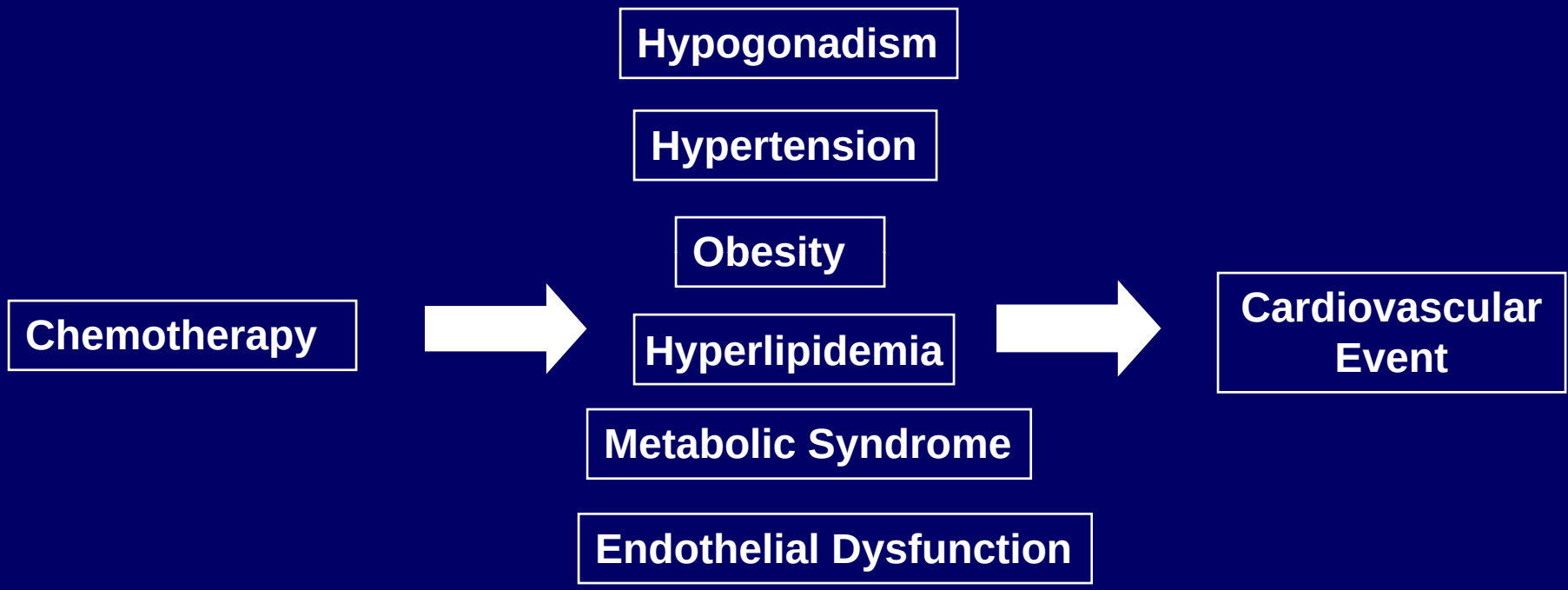
What Happens at a Visit?

- Referral to subspecialty consultants as needed
- Discussion of health prevention measures
- Complete questionnaires
- Discussion of research protocols
- Letter and recommendations to patient and to primary care physician

Penn TC Survivorship Research Projects

- Detection of subclinical atherosclerosis and endothelial dysfunction (Vaughn)
- TC genetic susceptibility (Nathanson)
- Neurocognitive effects of treatment (Coyne)
- Impact of late effects on QOL (Jacobs)
- TC-specific instrument development (Palmer)

TC Chemotherapy and Cardiovascular Risk



CV Risk in TC Survivors

CV Risk Factors
Framingham
Behavioral

CV Studies
Brachial Artery Reactivity
Carotid Artery Ultrasound
Biochemical Markers
Endothelial Progenitor Cells

Testicular Cancer Survivors
≥ 2 years from Diagnosis
Chemo vs. No Chemo

Cancer Survivorship Program

LIVING WELL AFTER CANCER

The University of Pennsylvania's Program for Cancer Survivors

The Abramson Cancer Center of the University of Pennsylvania is committed to helping each cancer survivor find ways to live life to the fullest. We have a nationally recognized program that focuses on the issues that survivors face. Called "Living Well After Cancer," the program was founded with a grant from the Lance Armstrong Foundation (LAF). The LAF helps support the program and credits it as the premier model for helping survivors understand, address, and control the medical and psychosocial effects of a cancer diagnosis and treatment.

At Penn, we focus on you, your particular medical situation, questions and needs. We help you understand the effects that your cancer diagnosis, surgery, chemotherapy, and/or radiation therapy may have on your long-term health. These health issues are commonly called 'late effects.' Because we know that there may be psychosocial effects, our team is also prepared to help you work through these concerns and issues. Insurance and infertility are also discussed in a private, supportive environment.

LAF LWAC Testicular Cancer Program

Program Staff

- Linda Jacobs (LWAC)
- Anna Meadows (LWAC)
- Steve Palmer (Psychiatry)
- Greg Garber (Counseling)
- Katrina Claghorn (Nutrition)
- Jo Midkiff (Research)

Consultants

- Joe Carver (Cardiology)
- Dupont Guerry (PLC)
- Bruce Malkowicz (Urology)
- Emile Mohler (Cardiology)
- Kate Nathanson (Genetics)
- Rebecca Smith (Rehab)
- Peter Snyder (Endocrine)
- Ruth Steinman (Psychiatry)
- Keith Van Arsdalen (Urology)

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