1. The Role of Androgen Deprivation Therapy in Cardiovascular Disease
   – A Longitudinal Prostate Cancer Study (RADICAL PC1)

2. A Randomized Intervention for Cardiovascular and Lifestyle Risk Factors in Prostate Cancer Patients (RADICAL PC2)

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BACKGROUND

Cardiovascular disease (CVD) occurs frequently in men with prostate cancer (PC), however the reasons are unclear. Specifically, the role of androgen deprivation therapy (ADT) in promoting CVD remains uncertain. There is also a lack of evidence to inform preventive strategies against CVD in this high risk group. It is unknown if the evidence to support CVD preventive strategies in the general population can be validly extrapolated to men with PC. Our objectives are, in men with PC, to

1. Determine in a representative sample, the incidence of CVD
2. Evaluate the independent relationship of CVD with ADT and other clinical characteristics
3. Evaluate a systematic CV and lifestyle risk factor modification strategy

METHODS

We propose a prospective cohort study of men with PC (RADICAL PC1) paired with a randomized, controlled trial of a strategy to systematically treat CVD risk factors (RADICAL PC2) (Figure).

Eligibility

Men will be eligible for PC1 or PC2 if they have PC that is either

a) new (i.e. the diagnosis was made within 1 year of the baseline visit) or
b) treated with ADT for the first time within 1 month prior or
c) to be treated with ADT for the first time within 1 month
Data on participant medical history, medications, dietary habits, physical activity, cognitive function, depression, potency, functional capacity, vital signs, anthropometrics, muscle strength, 6-minute walk distance, and routine blood tests will be collected at baseline and during follow-up over an average of 3 years.

**Intervention in RADICAL PC2**

The intervention group will receive the following:

1. Standardized advice on healthy diet and exercise
2. Low-dose antiplatelet agent,
3. Low- to moderate-dose statin
4. an ACE-I for baseline systolic blood pressure ≥130mmHg,

**Outcomes**

The primary outcome is the occurrence of the composite of cardiovascular death, myocardial infarction, stroke, heart failure, or arterial revascularization.

**Power**

PC1: 6000 participants will have 90% power to detect a hazard ratio 0.86 for a given exposure

PC2: 4116 participants randomized, with 434 primary outcome events will have 85% power to detect a hazard ratio of 0.75 in the intervention group.

**Figure**
New prostate cancer (diagnosed within 1 year) or within 1 month of commencing ADT for the 1st time
N=6000

RADICAL PC1
Observational registry
N=1884

Intervention:
Systematic CV risk factor management
N=2058

Control:
Usual care
N=2058

RADICAL PC2
Randomized, controlled trial
N=4116

Clinical outcomes (N=6000)