Epidemiology of Prostate Cancer in African Males

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Disclosures

Advisory boards/Lecturer/Consultant-

- Astellas
- Astra-Zeneca
- Bayer
- Eli Lilly
- Ferring
- Janssen
- Pfizer
- Sanofi
Percentage incidence of cancer in males.
Worldwide variation in prostate cancer incidence rates

Rates per 100,000 population

- US Black: 102
- US White: 60
- Sweden: 50
- Norway: 44
- Switzerland: 40
- UK: 23
- Japan: 7
- India: 6.6
- China: 1.2
PROSTATE CANCER IN AFRICA 2012
Controversies and Novel Treatments
Prof Shingai Mutambirwa
Consultant & Head Division Urology
Medical University of RSA
Pretoria RSA
EAU Paris 2012
Prostate Cancer in Sub-Saharan Africa

- Epidemiology:
  - 34-320/100 000
  - 1/6 will develop Pca in next 20yrs - 20% increase
  - Deaths from PCa to double in next 20yrs
  - 23% all male cancers
  - 41-96% Locally Advanced
  - 16-59% Metastatic
Local staging of prostate cancer

Skeletal related event (SRE) is a series of complications or treatment requirements that happen in routine practice. The “Field” endpoint includes the need for irradiation, chemotherapy or surgery, pathological fractures, spinal cord compression, and/or hypercalcaemia.

- Surgery to bone
- Pathological fracture
- Spinal cord compression
- Radiotherapy to bone
Prostate Cancer: Remarkably Common With Many Unanswered Questions

Understood:
• Natural history
• Prevalence
• Patterns of spread

Questions:
• Universal use of screening tests
• Choices of therapy
• Contributing factors

What “causes” Prostate cancer?
Factors Increasing Risk of Prostate Cancer

- Age
- Lifestyle
- Hormones
- Race
- Genetics
Predicted increase in incidence

PROBABLY 50% DON’T NEED TREATMENT!
Like finding a needle in a haystack.....

- **BRCA1**: 22 coding exons, > 5,500 bp

- **BRCA2**: 26 coding exons, > 11,000 bp
Dirk brings his family tree to class.
Chromosomal changes in the genome of cancer cells: tip of the iceberg

- Deletion
- Duplication
- Reciprocal translocation
- Ring Chromosome

Terminal Deletion
Insertion
Inversion
Robertsonian Translocation
Isochromosomes

http://www.tokyo-med.ac.jp/genet/cai-e.htm
Only a proportion is inherited
PSA /PCA3  POLARIS  CONFIRM-Dx
The six SNPs with the smallest P values of the SAPCS cohort (Stage 2)

<table>
<thead>
<tr>
<th>SNP ID</th>
<th>P*value</th>
<th>OR (95% CI)*</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. rs6983561 (C)</td>
<td>0.0024 *</td>
<td>1.54 (1.12-2.13)</td>
<td>8q24 region 2</td>
</tr>
<tr>
<td>2. rs1859962 (G)</td>
<td>0.0276 *</td>
<td>1.50 (1.03-2.20)</td>
<td>17q24</td>
</tr>
<tr>
<td>3. rs13254738 (C)</td>
<td>0.0363 *</td>
<td>0.70 (0.50-0.96)</td>
<td>8q24 region 2</td>
</tr>
<tr>
<td>4. rs10090154 (T)</td>
<td>0.0815</td>
<td>0.55 (0.36-0.83)</td>
<td>8q24 region 1</td>
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<tr>
<td>5. rs4242382 (A)</td>
<td>0.3189</td>
<td>0.07 (0.50-1.00)</td>
<td>8q24 region 1</td>
</tr>
<tr>
<td>6. rs1465618 (A)</td>
<td>0.4336</td>
<td>1.80 (1.02-3.16)</td>
<td>2p21</td>
</tr>
</tbody>
</table>

Tindall E; Hayes V; Bornman R; Segone A

Nat Gen, May 2007
Summary of 30 years of research (1971-2001)
A DOCTOR’S crystal ball

Genetic testing can reveal your chances of getting a hereditary disease. Do you dare find out your future?
Ovarian Cancer Incidence in BRCA+ Women


54% lifetime

23% lifetime

Genetic and Epigenetic Silencing of TumorSuppressor Genes