The Epidemiology and Treatment Strategy of Prostate Cancer in China

The Institute of Urology
Peking University
China

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In USA, CaP ranks the 1st and 2nd among male site-specific cancer for morbidity and mortality rates respectively.

In China, CaP ranks only 11th and 16th among male site-specific cancer for morbidity and mortality rates respectively (Data in 1995).

But the incidence of CaP in China has increased markedly in recent years.
Increase of Morbidity and Mortality Rates of Chinese

- In 1985, the age-adjusted morbidity and mortality rates of CaP in Beijing were 2.41 and 1.19/100,000 males respectively.
- In 1995, they were 4.55 and 2.36/100,000 males respectively.
- In China, the morbidity rate of CaP has increased about 2.3 times from 1985 to 1995.
Incidences of CaP among Chinese Living in Different Areas
Different Morbidity and Mortality among Chinese in Different Areas

Chinese living in different areas have quite different incidences of CaP, with one higher than another by several times.
The percentage of CaP was 11.3% (103/913) among 913 cases of BPH who received PSA screening in the outpatient clinic of the Institute of Urology, Peking University from 1996 - 1999.

The Incidental CaP in China

- In USA and Europe: about 10%, about 2 times higher than that of China.

Incidences of Latent CaP between American and Chinese

Hospital incidence of CaP
The Institute of Urology, Peking University (1951-1997)

(No. of inpatients 24860, No. of G-U tumor 5708, No. of CaP 519).

% of New CaP Cases in Different Years

The Institute of Urology, Peking University (n=310)
Factors Influencing Incidence of CaP

- Racial difference
- Environmental factors
- Dietary intake
  - Fat
  - Red Meat
  - Vegetable
  - Soy Bean
- Pollution
Influence of Life Style and Diet on CaP

- Strong correlation between fat consumption and the morbidity and mortality rates of CaP.
- Level of fat consumption per capita is highly correlated with the incidence of CaP.
- For American, 30%-40% of calories is from fat. Animal foods are main sources of dietary fat.
- For Chinese, only 11.5% of calories is from fat and 5.3% of dietary fat is from animal foods.

*Chinese J Urol 1997, 18: 58*
Typical Chinese Diet

- Low animal food, Particular red meat
- Low fat, particular meat origin
- High soy product
- High vegetable
- High carbohydrate
- High fiber
- Tea as the main kind of drink
Causes for Low Incidence of CaP in Chinese Males

- As major constituent of Chinese diet, Soy products contain high quantities of Phyto-estrogen that can suppress cancer growth.
- Low fat and low animal meat in traditional Chinese foods.
- Relatively longer CAG repeats for Chinese males. Shorter CAG repeats are associated with higher incidence and earlier onset of CaP.
Causes for Increase of Morbidity and Mortality Rates of CaP in China

- The life span of Chinese increases to 70 yrs for male and 74 yrs for female.
- The diagnostic level is increased.
- Chinese diet is relatively westernized with development of China economy.
Changing Constituents of Food Consumption for Chinese (1952 v 1997)
The incidences of latent and incidental CaP of Chinese are about 1/2 of those of western males.

The morbidity and mortality rates of Chinese are about 1/20 of those western males.

This difference may imply that histological CaP of Chinese is unlikely to develop into clinical CaP.
The low morbidity and mortality rates of CaP in China may depend on less intake of animal foods, especially fat and red meat, but more of cereals, vegetables, soybean products.

The increasing morbidity and mortality rates of CaP in China are highly correlated with the increasing intake of fat and red meat.
# Treatment Strategy of CaP in China

<table>
<thead>
<tr>
<th>Treatment choices</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>• Radical Prostatectomy</td>
<td>RP</td>
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<tr>
<td>• Radiation Therapy</td>
<td>RT</td>
</tr>
<tr>
<td>(External, Brakytherapy)</td>
<td></td>
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<tr>
<td>• Radical Prostatectomy + Hormone Therapy</td>
<td>RP+HT</td>
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<tr>
<td>• Radiation Therapy + Hormone Therapy</td>
<td>RT+HT</td>
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<tr>
<td>• Hormone Therapy</td>
<td>HT</td>
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<tr>
<td>• Watchful Waiting</td>
<td>WW</td>
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</table>
% of Different Stages of CaP in China

The Institute of Urology, Peking University
(n=144, 1995-1999)
## Treatment Strategy for HRPC

### For HRPC:

<table>
<thead>
<tr>
<th>Life Expectancy</th>
<th>Life Expectancy</th>
<th>With Comorbidity</th>
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<tbody>
<tr>
<td>&gt; 10 years</td>
<td>&lt; 10 years</td>
<td>Comorbidity</td>
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- **Second-line hormone therapy**
  - Estrogen high-dose therapy
  - Antiandrogen withdrawal: 1, 1, 1
  - Dexamethasone therapy: 5, 5, 5

- **Estramustine**: 2, 2, 2
- **Chemotherapy**: 3, 3, 3
- **Chemotherapy + Estramustine**: 4, 4, 4
- **Watchful waiting**
NHT and AHT for CaP before and after RP and RT in China

Treatment methods and period when performing NHT and AHT

- MAB for 3 mos
- MAB for 1 mo and then LHRHa for 2 mos.
- For AHT, if PSA > 0.2ng/ml after RP, MAB, LHRHa till PSA < 0.2ng/ml or orchiectomy.
Percentage of CaP Undergoing HT by Clinical Stage

- Stage I % Second-line treatment
- Stage II 50% NHT/AHT
- Stage III 100% First-line treatment
- Stage IV 100% First-line treatment
- HRPC 100% Antianrdogen withdrawal
General Views on Different HT

- **Orchiectomy**: Can be done instead of LHRHa which is effective due to financial cause; The most commonly performed HT in rural areas.
- **LHRHa**: the First-line treatment in HT.
- **Antiandrogens**: Performed on MAB.
- **Estrogens**: Performed due to financial cause in rural areas.
Combined Hormone Therapy (CHT) in China (1)

- Percentage of patients undergoing CHT: About 50%.
- Combinations employed: LHRHa+nonsteroidal antiandrogens
  Orchiectomy+ nonsteroidal antiandrogens
The Current Status of HT for CaP in China (1)

- In China, most urologists still accept the concept of MAB for HT of CaP, although don’t emphasize that MAB should be done in all cases.
- For Chinese patients, the higher the education level they received, the more the accepted rate of drug castration-LHRHa and the less the accepted rate of operation castration-orchieectomy.
Due to its cheapness and one-step procedure, orchiectomy is much more accepted than LHRHa by both urologists and patients in rural areas.

Estrogens are still used to treat CaP in some areas due to its cheapness.

Cyproterone acetate (CPA) and Casodex (bicalutamide) 150mg haven’t been launched in China.