폐암검진의 현황과 미래 전망을 살펴본다

 아주대학교 의과대학 내과학학교실

신 승 수

- 바람직한 진단검사의 조건
- 검진의 근거인 NLST의 결과는?
- 검진대상의 최적 시나리오 결정의 배경
- 우리나라의 권고안
- 사범사업의 진행

---

Key Questions

National Lung Screening Trial (NLST)

Inclusion
- 55-74 years old
- 30PY or more smoking
- Within 15yrs of quitting time

Exclusion
- Previous lung ca
- Chest CT within 18mos
- Hemothysis
- (unexplained) 6.8kg or more wt loss in the last year

- Accuracy
  - Sensitivity & Specificity
  - Predictive values
  - Likelihood ratios
  - Diagnostic odds ratio

- Effectiveness
  - Therapeutic
  - Clinical outcome
  - Benefit vs. Harm
33 centers
Enrolled 2002-2004
Screened 2002-2007
F/U -2009

4 or more multidetector CT
Radiation dose 1.5mSv
Image
- Independently, first
- Then, Compared with previous image(s)
Positive
- Non-calcified nodule (4mm or more )
- Adenopathy, hilar or mediastinal

Primary endpoint
- Lung cancer death comparison
Secondary endpoint
- All cause death comparison
- Lung cancer incidence comparison

Accuracy

<table>
<thead>
<tr>
<th>Radiation source</th>
<th>Radiation exposure (mSv)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air travel, 10hrs</td>
<td>0.04</td>
</tr>
<tr>
<td>Chest radiography (PA or PA+lat)</td>
<td>0.1-0.2</td>
</tr>
<tr>
<td>Screening mammogram</td>
<td>0.4</td>
</tr>
<tr>
<td>LDCT</td>
<td>1.4</td>
</tr>
<tr>
<td>Background radiation, 1yrs</td>
<td>3-5</td>
</tr>
<tr>
<td>Diagnostic CT</td>
<td>7</td>
</tr>
</tbody>
</table>

LDCT

<table>
<thead>
<tr>
<th></th>
<th>Ca+</th>
<th>Ca-</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT+</td>
<td>270</td>
<td>6911</td>
</tr>
<tr>
<td>CT-</td>
<td>18</td>
<td>19043</td>
</tr>
<tr>
<td></td>
<td>288</td>
<td>25954</td>
</tr>
</tbody>
</table>

Sensitivity = 93.8%
Specificity = 73.4%
Positive Predictive Value = 3.8%
Negative Predictive Value = 99.9%
Positive Likelihood Ratio = 3,521
Negative Likelihood Ratio = 0.085
Diagnostic Odds Ratio = 41,423

CXR

<table>
<thead>
<tr>
<th></th>
<th>Ca+</th>
<th>Ca-</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXR+</td>
<td>136</td>
<td>2243</td>
</tr>
<tr>
<td>CXR-</td>
<td>49</td>
<td>23547</td>
</tr>
<tr>
<td></td>
<td>185</td>
<td>25790</td>
</tr>
</tbody>
</table>

Sensitivity = 73.5%
Specificity = 91.3%
Positive Predictive Value = 5.7%
Negative Predictive Value = 99.8%
Positive Likelihood Ratio = 8,453
Negative Likelihood Ratio = 0.290
Diagnostic Odds Ratio = 29,148