Introduction

- Green tobacco sickness (GTS) is known as an occupational disease among tobacco harvesters, and a form of acute nicotine intoxication by the absorption of nicotine through the skin from the wet green tobacco plant.
- GTS was first reported among tobacco workers in Florida by Weizenecker and Deal (1970). Major symptoms are headache, dizziness, nausea and vomiting. In Korea, GTS was reported firstly in 2001.
- We carried out the questionnaire survey and the measurement of cotinine level to understand the prevalence, incidence density, and risk factors of GTS in Korea.
Materials and Methods

- The authors conducted a questionnaire survey cotinine measurement among the tobacco harvesters (40 cases, 20 couples in tobacco harvesting households) in Cheongsong-gun from 2008 to 2009.
- The applied case definition of GTS was vomiting or nausea and dizziness or headaches during or after tobacco harvesting.
- We measured cotinine concentration in urine before (morning, T1), during (am. T2 & pm. T3), after (night, T4) tobacco harvesting. And we collected baseline urine (T5) in non-harvesting season.
- Urinary cotinine was analyzed with a reverse-phase high performance liquid chromatography (HPLC) system and expressed as geometric mean and standard deviation.

Definition of GTS

- Definition of GTS (By Dr. Arcury, 2001)
  ① occurred relating to tobacco harvesting
  ② headache or dizziness
  ③ nausea or vomiting
- Generally GTS is defined by questionnaire

Results

Prevalence of green tobacco sickness according to age and gender

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Subjects</th>
<th>Male No. of cases</th>
<th>%</th>
<th>Female No. of cases</th>
<th>%</th>
<th>Total No. of cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>1</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>2</td>
<td>66.7</td>
<td>2</td>
</tr>
<tr>
<td>50-59</td>
<td>11</td>
<td>2</td>
<td>18.2</td>
<td>12</td>
<td>6</td>
<td>50.0</td>
<td>23</td>
</tr>
<tr>
<td>≥60</td>
<td>8</td>
<td>2</td>
<td>25.0</td>
<td>3</td>
<td>1</td>
<td>60.0</td>
<td>11</td>
</tr>
<tr>
<td>total</td>
<td>20</td>
<td>4</td>
<td>20.0</td>
<td>20</td>
<td>11</td>
<td>55.0</td>
<td>40</td>
</tr>
</tbody>
</table>

p<0.05 by Chi-square test

<table>
<thead>
<tr>
<th>Non-smokers</th>
<th>Subjects</th>
<th>No. of cases</th>
<th>%</th>
<th>Smokers</th>
<th>Subjects</th>
<th>No. of cases</th>
<th>%</th>
<th>Total</th>
<th>Subjects</th>
<th>No. of cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>15</td>
<td>57.7</td>
<td></td>
<td>14</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td>40</td>
<td>15</td>
<td>37.5</td>
<td></td>
</tr>
</tbody>
</table>

p<0.01 by U-test

Incidence density 3.45 spells/100 person-days

The cotinine level by time and period

- The cotinine level by time and period
In Korea, there were estimated 15,000 tobacco-harvesting workers in 2009, and most may be stricken with GTS. And these suffering may continue unless cigarette disappears on the planet. In the future it is expected that more extensive epidemiological studies including the incidence and associated risk factors will be conducted.
Thank You!

ICOH 2015
SEOUL