The Basic facts of Korean breast cancer in 2013:
Results of a nationwide survey and breast cancer registry database

Sun Young Min, Zisun Kim1, Min Hee Hur2, Chan Seok Yoon2, Eun-Hwa Park3, Kyu-Won Jung4, The Korean Breast Cancer Society Consortium*

Department of Surgery, Kyung Hee University Medical Center, Kyung Hee University School of Medicine, Seoul; 1Department of Surgery, Soonchunhyang University Bucheon Hospital, Soonchunhyang University College of Medicine, Bucheon; 2Department of Surgery, Cheil General Hospital and Women’s Healthcare Center, Dankook University College of Medicine, Seoul; 3Department of Surgery, Gangneung Asan Hospital, University of Ulsan College of Medicine, Gangneung; 4The Korea Central Cancer Registry, Division of Cancer Registration and Surveillance, National Cancer Center, Goyang, Korea
Backgrounds

- Korean Breast Cancer Society (KBCS)
  - Nationwide, hospital-based breast cancer registry (1996~)
  - Biannual data announcement (1998~)
  - Online registration program (2001~)

- Aim
  - Analyze the basic facts of Korean breast cancer in 2013
  - Analyze trends in clinical characteristics and management of breast cancer (2002~2013)
Methods

• Data collection
  – Newly diagnosed primary breast cancer patients (2013.01.01~2013.12.31)
  • Nationwide questionnaire survey
    : total number (invasive breast cancer + in situ cancer), age
  • KBCS online registry : clinical manifestation, diagnostic method, type of surgery, pathologic information (histological type, AJCC/TNM stage, biological markers)

• Statistical analysis
  – Linear regression analysis: trends in each parameter over time
  – Joinpoint regression method by Joinpoint Regression Program (ver.4.2.0.2)
  – \( p \)-value <0.05 was regarded as statistically significant
Results

Survey data of 2013

• **99 hospitals and clinics**
  - University hospital 73.2%
  - General hospital 23.7%
  - Private clinic 3.1%

• **19,273 female breast cancer cases**
  - Invasive ductal carcinoma (IDC): 16,012 cases
  - Ductal carcinoma in situ (DCIS): 3,264 cases
  - Male IDC & DCIS: 43 cases

• Crude rate of incidence (CR) : 76.2 women per 100,000
### Age distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>Survey data</th>
<th>KBCS Registry data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of patients (%)</td>
<td>No. of patients (%)</td>
</tr>
<tr>
<td>&lt;20</td>
<td>4 (0.02)</td>
<td>4 (0.03)</td>
</tr>
<tr>
<td>20-29</td>
<td>180 (1.0)</td>
<td>135 (1.1)</td>
</tr>
<tr>
<td>30-39</td>
<td>1,822 (10.0)</td>
<td>1,288 (10.3)</td>
</tr>
<tr>
<td>40-49</td>
<td>6,559 (36.1)</td>
<td>4,620 (36.9)</td>
</tr>
<tr>
<td>50-59</td>
<td>5,767 (31.7)</td>
<td>3,889 (31.1)</td>
</tr>
<tr>
<td>60-69</td>
<td>2,554 (14.0)</td>
<td>1,713 (13.7)</td>
</tr>
<tr>
<td>70-79</td>
<td>1,148 (6.3)</td>
<td>774 (6.2)</td>
</tr>
<tr>
<td>&gt;80</td>
<td>150 (0.8)</td>
<td>99 (0.7)</td>
</tr>
<tr>
<td>Total</td>
<td>18,184 (100.0)</td>
<td>12,522 (100.0)</td>
</tr>
</tbody>
</table>

Unknown data of survey data were excepted.
### Stage distribution

<table>
<thead>
<tr>
<th>Stage</th>
<th>KBCS Registry data</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of patients</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1,749</td>
<td>14.5</td>
</tr>
<tr>
<td>1</td>
<td>5,152</td>
<td>42.6</td>
</tr>
<tr>
<td>2</td>
<td>3,895</td>
<td>32.2</td>
</tr>
<tr>
<td>3</td>
<td>1,121</td>
<td>9.3</td>
</tr>
<tr>
<td>4</td>
<td>175</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>12,092</td>
<td>100.0</td>
</tr>
</tbody>
</table>

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### Types of Surgical Treatment

<table>
<thead>
<tr>
<th>Surgery</th>
<th>KBCS Registry data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of patients</td>
<td>%</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>4,036</td>
<td>32.4</td>
</tr>
<tr>
<td><strong>Breast conserving surgery</strong></td>
<td>8,366</td>
<td>67.1</td>
</tr>
<tr>
<td>Others</td>
<td>57</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12,459</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Total number of newly diagnosed breast cancer patients

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Trends in crude incidence rates of Korean female breast cancer from 2002 to 2013

AAPC : +15.1%

APC : +2.0%

APC : +8.5%

APC : Annual Percentage Change (calculated using Joinpoint Regression Program)
Changes in the median age

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Median Age (yr)

<table>
<thead>
<tr>
<th>Year</th>
<th>Median Age (yr)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>47</td>
<td>59.4</td>
</tr>
<tr>
<td>2004</td>
<td>47</td>
<td>60.1</td>
</tr>
<tr>
<td>2006</td>
<td>48</td>
<td>56.6</td>
</tr>
<tr>
<td>2008</td>
<td>49</td>
<td>55.7</td>
</tr>
<tr>
<td>2010</td>
<td>49</td>
<td>51.2</td>
</tr>
<tr>
<td>2011</td>
<td>50</td>
<td>48.7</td>
</tr>
<tr>
<td>2012</td>
<td>51</td>
<td>46.6</td>
</tr>
<tr>
<td>2013</td>
<td>50</td>
<td>51.7</td>
</tr>
</tbody>
</table>


Proportion (%)

Median Age (yr)

Postmenopause

Premenopause

Legend:

- Red: Postmenopause
- Blue: Premenopause
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Changes in the stage distribution

Year

Proportion (%)
Changes in the Surgical Management

Proportion (%)

Year

Mastectomy
BCS
Others


61.3 59 49.6 42.2 61.9 65.7 67.2 67.1

37.6 40.2 49.1 37.5 33.8 32.3 32.4

1.1 0.8 1.3 1 0.6 0.5 0.5 0.5

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Changing trends of Breast reconstruction

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Number of breast reconstruction

Year


380 536 626 738 812 845 910 1111

0 200 400 600 800 1000 1200

Changing trends of Hormone receptor

Year


ER positive
PR positive

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Conclusion

• Limitations
  – The survey data represented about 93% of invasive breast cancer cases of the National Cancer Registry.
  – The result of incidence was not age-standardized.

• Conclusion

Breast cancer incidence
Breast conserving surgery (67.1%)
Early Stage Breast cancer
ER positive breast cancer (75.4%)
Breast reconstruction

– The increase of crude rate of incidence had slowed down since 2010.
Thank you for your attention !