Appendix 1. List of Histologic Subtype Codes

| Adenosquamous cell: | 8015-3, 8560-3. |

Sarcoma and metastatic tumor were excluded from the study.
Appendix 2. Comparison of patient demographics between stage IA and IB among women aged <50 years with cervical cancer who received hysterectomy and no radiotherapy

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Stage IA</th>
<th>Stage IB</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>5,526 (58.7%)</td>
<td>3,893 (41.3%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>38.0 (±6.5)</td>
<td>37.7 (±6.6)</td>
<td>.30</td>
</tr>
<tr>
<td>40-49</td>
<td>2,414 (43.7%)</td>
<td>1,640 (42.1%)</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>2,485 (45.0%)</td>
<td>1,789 (46.0%)</td>
<td></td>
</tr>
<tr>
<td>&lt; 30</td>
<td>627 (11.3%)</td>
<td>464 (11.9%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>.001</td>
</tr>
<tr>
<td>White</td>
<td>3,470 (62.8%)</td>
<td>2,389 (61.4%)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>525 (9.5%)</td>
<td>316 (8.1%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>1,061 (19.2%)</td>
<td>797 (20.5%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>321 (5.8%)</td>
<td>299 (7.7%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>113 (2.0%)</td>
<td>66 (1.7%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>36 (0.7%)</td>
<td>26 (0.7%)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>Single</td>
<td>1,290 (23.3%)</td>
<td>918 (23.6%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>3,977 (72.0%)</td>
<td>2,836 (72.9%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>259 (4.7%)</td>
<td>137 (3.5%)</td>
<td></td>
</tr>
<tr>
<td>Registry Area</td>
<td></td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>West</td>
<td>3,157 (57.1%)</td>
<td>2,344 (60.2%)</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>1,207 (21.8%)</td>
<td>778 (20.0%)</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>1,162 (21.0%)</td>
<td>771 (19.8%)</td>
<td></td>
</tr>
<tr>
<td>Year at diagnosis</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>1983-1989</td>
<td>776 (14.0%)</td>
<td>888 (22.8%)</td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>1,781 (32.2%)</td>
<td>1,472 (37.8%)</td>
<td></td>
</tr>
<tr>
<td>2000-2009</td>
<td>2,396 (43.4%)</td>
<td>1,141 (29.3%)</td>
<td></td>
</tr>
<tr>
<td>2010-2012</td>
<td>573 (10.4%)</td>
<td>392 (10.1%)</td>
<td></td>
</tr>
<tr>
<td>Histology</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Squamous cell</td>
<td>4,150 (75.1%)</td>
<td>2,305 (59.2%)</td>
<td></td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>876 (15.9%)</td>
<td>1,256 (32.3%)</td>
<td></td>
</tr>
<tr>
<td>Adenosquamous cell</td>
<td>122 (2.2%)</td>
<td>227 (5.8%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>378 (6.8%)</td>
<td>105 (2.7%)</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>1</td>
<td>670 (12.1%)</td>
<td>594 (15.3%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>797 (14.4%)</td>
<td>1,311 (33.7%)</td>
<td></td>
</tr>
<tr>
<td>3 (including high grade)</td>
<td>361 (6.5%)</td>
<td>1,060 (27.2%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>3,698 (66.9%)</td>
<td>928 (23.8%)</td>
<td></td>
</tr>
<tr>
<td>Surgery type</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total/pan/simple hyst.</td>
<td>4,526 (81.9%)</td>
<td>1,699 (43.6%)</td>
<td></td>
</tr>
<tr>
<td>mRH/RH</td>
<td>653 (11.8%)</td>
<td>1,832 (47.1%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>347 (6.3%)</td>
<td>362 (9.3%)</td>
<td></td>
</tr>
<tr>
<td>Ovarian conservation</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>2,590 (46.9%)</td>
<td>2,921 (75.0%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2,936 (53.1%)</td>
<td>972 (25.0%)</td>
<td></td>
</tr>
</tbody>
</table>

Number (%) or mean (±SD) is shown. Student t test and chi-square test for P values. Significant P-values are emboldened. Abbreviations: hyst, hysterectomy; mRH, modified hysterectomy; and RH, radical hysterectomy.
### Appendix 3. Median age at cervical cancer diagnosis in women aged <50 years with stage IA disease (n=5,526)

<table>
<thead>
<tr>
<th>Follow-up time (years)</th>
<th>Ovarian conservation</th>
<th>Oophorectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 years or longer</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>20 years or longer</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>25 years or longer</td>
<td>34</td>
<td>37</td>
</tr>
</tbody>
</table>

The authors provided this information as a supplement to their article.
Appendix 4. Cause of death for women aged <50 years with stage IA cervical cancer who received hysterectomy and no radiotherapy (n=5,526)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Event No.</th>
<th>Cumulative risk</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10-yr (%)</td>
<td>15-yr (%)</td>
</tr>
<tr>
<td>Cervical cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oophorectomy</td>
<td>36</td>
<td>1.3%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Ovarian conservation</td>
<td>25</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oophorectomy</td>
<td>46</td>
<td>0.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Ovarian conservation</td>
<td>18</td>
<td>0.4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Other chronic disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oophorectomy</td>
<td>20</td>
<td>0.4%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Ovarian conservation</td>
<td>6</td>
<td>0.1%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Other causes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oophorectomy</td>
<td>57</td>
<td>1.3%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Ovarian conservation</td>
<td>40</td>
<td>1.2%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Other malignancies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oophorectomy</td>
<td>56</td>
<td>1.0%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Ovarian conservation</td>
<td>42</td>
<td>1.0%</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

Number (%) is shown. Log-rank test for P-values. Significant P-values are emboldened. Abbreviations: 10-yr (%), 15-yr (%), and 20-yr (%), 10-, 15-, and 20-year cumulative risk of death.
### Appendix 5. Characteristics of ovarian conservation in women age <50 years with stage IB cervical cancer who received hysterectomy and no radiotherapy (n=3,893).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Ovarian conservation</th>
<th>Oophorectomy</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>972 (25.0%)</td>
<td>2,921 (75.0%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>40-49</td>
<td>244 (14.9%)</td>
<td>1,396 (85.1%)</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>556 (31.1%)</td>
<td>1,233 (68.9%)</td>
<td></td>
</tr>
<tr>
<td>&lt; 30</td>
<td>172 (37.1%)</td>
<td>292 (62.9%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>White</td>
<td>553 (23.1%)</td>
<td>1,836 (76.9%)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>73 (23.1%)</td>
<td>243 (76.9%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>259 (32.5%)</td>
<td>538 (67.5%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>68 (22.7%)</td>
<td>231 (77.3%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>11 (16.7%)</td>
<td>55 (83.3%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>8 (30.8%)</td>
<td>18 (69.2%)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Single</td>
<td>294 (32.0%)</td>
<td>624 (68.0%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>641 (22.6%)</td>
<td>2,197 (77.4%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>37 (27.0%)</td>
<td>100 (73.0%)</td>
<td></td>
</tr>
<tr>
<td>Registry Area</td>
<td></td>
<td></td>
<td>.003</td>
</tr>
<tr>
<td>West</td>
<td>630 (26.9%)</td>
<td>1,714 (73.1%)</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>166 (21.3%)</td>
<td>612 (78.7%)</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>176 (22.8%)</td>
<td>595 (77.2%)</td>
<td></td>
</tr>
<tr>
<td>Year at diagnosis</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>1983-1989</td>
<td>48 (5.4%)</td>
<td>840 (94.6%)</td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>319 (21.7%)</td>
<td>1,153 (78.3%)</td>
<td></td>
</tr>
<tr>
<td>2000-2009</td>
<td>431 (37.8%)</td>
<td>710 (62.2%)</td>
<td></td>
</tr>
<tr>
<td>2010-2012</td>
<td>174 (44.4%)</td>
<td>218 (55.6%)</td>
<td></td>
</tr>
<tr>
<td>Stage</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>IB1</td>
<td>645 (28.9%)</td>
<td>1,585 (71.1%)</td>
<td></td>
</tr>
<tr>
<td>IB2</td>
<td>58 (25.0%)</td>
<td>174 (75.0%)</td>
<td></td>
</tr>
<tr>
<td>IB NOS</td>
<td>269 (18.8%)</td>
<td>1,162 (81.2%)</td>
<td></td>
</tr>
<tr>
<td>Histology</td>
<td></td>
<td></td>
<td>.46</td>
</tr>
<tr>
<td>Squamous cell</td>
<td>574 (24.9%)</td>
<td>1,731 (75.1%)</td>
<td></td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>326 (26.0%)</td>
<td>930 (74.0%)</td>
<td></td>
</tr>
<tr>
<td>Adenosquamous cell</td>
<td>49 (21.6%)</td>
<td>178 (78.4%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>23 (25.0%)</td>
<td>82 (75.0%)</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td>.035</td>
</tr>
<tr>
<td>1</td>
<td>172 (29.0%)</td>
<td>422 (71.0%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>325 (24.8%)</td>
<td>986 (75.2%)</td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>268 (25.3%)</td>
<td>792 (74.7%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>207 (22.3%)</td>
<td>721 (77.7%)</td>
<td></td>
</tr>
<tr>
<td>Surgery type</td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total/pan/simple hyst.</td>
<td>777 (45.7%)</td>
<td>922 (54.3%)</td>
<td></td>
</tr>
<tr>
<td>mRH/RH</td>
<td>0</td>
<td>1,832 (100%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>195 (53.9%)</td>
<td>167 (46.1%)</td>
<td></td>
</tr>
</tbody>
</table>

Number (%) or mean (±SD) is shown. Student t-test for Chi-square test for P values. Significant P-values are emboldened.
*including high grade. Abbreviations: NOS, not otherwise specified; hyst, hysterectomy; mRH, modified hysterectomy; and RH, radical hysterectomy.
### Appendix 6. Comparison of adenocarcinoma and squamous histology in women aged <50 years with stage I cervical cancer who received ovarian conservation (n=3,715)

<table>
<thead>
<tr>
<th></th>
<th>Adenocarcinoma</th>
<th>Squamous</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No.</strong></td>
<td>n=765</td>
<td>n=2,950</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>221 (28.9%)</td>
<td>856 (29.0%)</td>
<td>.41</td>
</tr>
<tr>
<td>30-39</td>
<td>444 (58.0%)</td>
<td>1,607 (54.5%)</td>
<td></td>
</tr>
<tr>
<td>&lt; 30</td>
<td>100 (13.1%)</td>
<td>487 (16.5%)</td>
<td>.41</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td>&lt; .001</td>
</tr>
<tr>
<td>White</td>
<td>504 (65.9%)</td>
<td>1,760 (59.7%)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>20 (2.6%)</td>
<td>275 (9.3%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>180 (23.5%)</td>
<td>671 (22.7%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>46 (6.0%)</td>
<td>159 (5.4%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>9 (1.2%)</td>
<td>66 (2.2%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>6 (0.8%)</td>
<td>19 (0.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td>.08</td>
</tr>
<tr>
<td>Single</td>
<td>194 (25.4%)</td>
<td>802 (27.2%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>547 (71.5%)</td>
<td>2,010 (68.1%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>24 (3.1%)</td>
<td>138 (4.7%)</td>
<td></td>
</tr>
<tr>
<td><strong>Registry Area</strong></td>
<td></td>
<td></td>
<td>.008</td>
</tr>
<tr>
<td>West</td>
<td>484 (63.3%)</td>
<td>1,787 (60.6%)</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>122 (15.9%)</td>
<td>616 (20.9%)</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>159 (20.8%)</td>
<td>547 (18.5%)</td>
<td></td>
</tr>
<tr>
<td><strong>Year at diagnosis</strong></td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>1983-1989</td>
<td>31 (4.1%)</td>
<td>350 (11.9%)</td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>180 (23.5%)</td>
<td>956 (32.4%)</td>
<td></td>
</tr>
<tr>
<td>2000-2009</td>
<td>387 (50.6%)</td>
<td>1,330 (45.1%)</td>
<td></td>
</tr>
<tr>
<td>2010-2012</td>
<td>167 (21.8%)</td>
<td>314 (10.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Stage</strong></td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>IA</td>
<td>369 (48.2%)</td>
<td>2,283 (77.4%)</td>
<td></td>
</tr>
<tr>
<td>IB</td>
<td>326 (42.6%)</td>
<td>574 (19.5%)</td>
<td></td>
</tr>
<tr>
<td>I NOS</td>
<td>70 (9.2%)</td>
<td>93 (3.2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>1</td>
<td>238 (31.1%)</td>
<td>262 (8.9%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>194 (25.4%)</td>
<td>518 (17.6%)</td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>69 (9.0%)</td>
<td>324 (11.0%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>264 (34.5%)</td>
<td>1,846 (62.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Surgery type</strong></td>
<td></td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total/pan/simple hyst.</td>
<td>607 (79.3%)</td>
<td>2,704 (91.7%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>158 (20.7%)</td>
<td>246 (8.3%)</td>
<td></td>
</tr>
</tbody>
</table>

Number (%) or mean (±SD) is shown. Student t test and chi-square test for P values. Significant P-values are emboldened. *including high-grade tumors. Abbreviations: hyst, hysterectomy; mRH, modified hysterectomy; and RH, radical hysterectomy.
Appendix 7. Multivariable analysis for cause-specific survival among women aged <50 years with stage I cervical cancer who had ovarian conservation and no radiotherapy (n=3,715)

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>5-yr (%)</th>
<th>10-yr (%)</th>
<th>Adjusted-HR (95%CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>1,077</td>
<td>98.8%</td>
<td>97.7%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>2,051</td>
<td>98.8%</td>
<td>98.3%</td>
<td>0.60 (0.35-1.02)</td>
<td>.06</td>
</tr>
<tr>
<td>&lt; 30</td>
<td>587</td>
<td>97.7%</td>
<td>97.5%</td>
<td>0.69 (0.34-1.40)</td>
<td>.31</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>2,264</td>
<td>99.0%</td>
<td>98.3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>295</td>
<td>98.9%</td>
<td>98.3%</td>
<td>0.81 (0.31-2.11)</td>
<td>.66</td>
</tr>
<tr>
<td>Hispanic</td>
<td>851</td>
<td>97.8%</td>
<td>97.0%</td>
<td>1.80 (0.99-3.24)</td>
<td>.05</td>
</tr>
<tr>
<td>Asian</td>
<td>205</td>
<td>96.2%</td>
<td>96.2%</td>
<td>1.89 (0.76-4.66)</td>
<td>.17</td>
</tr>
<tr>
<td>Others</td>
<td>75</td>
<td>100.0%</td>
<td>100.0%</td>
<td>n.a.</td>
<td>.98</td>
</tr>
<tr>
<td>Unknown</td>
<td>25</td>
<td>100.0%</td>
<td>100.0%</td>
<td>n.a.</td>
<td>.99</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>996</td>
<td>98.6%</td>
<td>97.6%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>2,557</td>
<td>98.6%</td>
<td>98.0%</td>
<td>1.01 (0.61-1.67)</td>
<td>.84</td>
</tr>
<tr>
<td>Unknown</td>
<td>162</td>
<td>100.0%</td>
<td>100.0%</td>
<td>n.a.</td>
<td>.96</td>
</tr>
<tr>
<td><strong>Registry Area</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>2,271</td>
<td>98.4%</td>
<td>97.9%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>738</td>
<td>99.2%</td>
<td>98.4%</td>
<td>0.97 (0.46-2.05)</td>
<td>.97</td>
</tr>
<tr>
<td>East</td>
<td>706</td>
<td>98.7%</td>
<td>97.9%</td>
<td>1.43 (0.73-2.79)</td>
<td>.29</td>
</tr>
<tr>
<td><strong>Year at diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1983-1989</td>
<td>381</td>
<td>99.7%</td>
<td>99.2%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>1,136</td>
<td>98.0%</td>
<td>97.3%</td>
<td>1.17 (0.46-3.01)</td>
<td>.74</td>
</tr>
<tr>
<td>2000-2009</td>
<td>1,717</td>
<td>98.6%</td>
<td>98.2%</td>
<td>0.95 (0.35-2.54)</td>
<td>.92</td>
</tr>
<tr>
<td>2010-2012</td>
<td>481</td>
<td>100.0%</td>
<td>n.a</td>
<td>n.a.</td>
<td>.97</td>
</tr>
<tr>
<td><strong>Cancer stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>2,652</td>
<td>99.6%</td>
<td>99.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>IB</td>
<td>900</td>
<td>95.7%</td>
<td>94.8%</td>
<td>5.03 (2.68-9.43)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>I NOS</td>
<td>163</td>
<td>97.3%</td>
<td>97.3%</td>
<td>4.08 (1.57-10.6)</td>
<td>.004</td>
</tr>
<tr>
<td><strong>Histology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squamous cell</td>
<td>2,950</td>
<td>98.7%</td>
<td>98.1%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>765</td>
<td>98.3%</td>
<td>97.5%</td>
<td>0.82 (0.43-1.56)</td>
<td>.55</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>500</td>
<td>99.2%</td>
<td>98.1%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>712</td>
<td>97.8%</td>
<td>97.0%</td>
<td>1.50 (0.57-4.01)</td>
<td>.41</td>
</tr>
<tr>
<td>3*</td>
<td>393</td>
<td>94.3%</td>
<td>93.0%</td>
<td>3.19 (1.23-8.30)</td>
<td>.02</td>
</tr>
<tr>
<td>Unknown</td>
<td>2,110</td>
<td>99.5%</td>
<td>99.1%</td>
<td>1.10 (0.42-2.92)</td>
<td>.84</td>
</tr>
</tbody>
</table>

A Cox proportional hazard regression model for multivariable analysis. Significant P-values are emboldened. *including high-grade tumors. Abbreviations: NOS, not otherwise specified; 5-yr (%) and 10-yr (%), 5-year and 10-year proportion, respectively.
Appendix 8. Characteristics of women aged <50 with stage IA cervical cancer based on performance of oophorectomy after propensity score matching (n=3,072).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Ovarian conservation</th>
<th>Oophorectomy</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>n=1,536</td>
<td>n=1,536</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>858 (55.9%)</td>
<td>858 (55.9%)</td>
<td>.92</td>
</tr>
<tr>
<td>30-39</td>
<td>591 (38.5%)</td>
<td>586 (38.2%)</td>
<td></td>
</tr>
<tr>
<td>&lt; 30</td>
<td>87 (5.7%)</td>
<td>92 (6.0%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>.99</td>
</tr>
<tr>
<td>White</td>
<td>955 (62.2%)</td>
<td>955 (62.2%)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>168 (10.9%)</td>
<td>160 (10.4%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>293 (19.1%)</td>
<td>293 (19.1%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>89 (5.8%)</td>
<td>95 (6.2%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>22 (1.4%)</td>
<td>25 (1.6%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>9 (0.6%)</td>
<td>8 (0.5%)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td>.81</td>
</tr>
<tr>
<td>Single</td>
<td>357 (23.2%)</td>
<td>342 (22.3%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1,107 (72.1%)</td>
<td>1,121 (73.0%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>72 (4.7%)</td>
<td>73 (4.8%)</td>
<td></td>
</tr>
<tr>
<td>Registry area</td>
<td></td>
<td></td>
<td>.69</td>
</tr>
<tr>
<td>West</td>
<td>847 (55.1%)</td>
<td>845 (55.0%)</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>358 (23.3%)</td>
<td>343 (22.3%)</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>331 (21.5%)</td>
<td>348 (22.7%)</td>
<td></td>
</tr>
<tr>
<td>Year at diagnosis</td>
<td></td>
<td></td>
<td>.80</td>
</tr>
<tr>
<td>1983-1989</td>
<td>193 (12.6%)</td>
<td>177 (11.5%)</td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>364 (23.7%)</td>
<td>374 (24.3%)</td>
<td></td>
</tr>
<tr>
<td>2000-2009</td>
<td>791 (51.5%)</td>
<td>803 (52.3%)</td>
<td></td>
</tr>
<tr>
<td>2010-2012</td>
<td>188 (12.2%)</td>
<td>182 (11.8%)</td>
<td></td>
</tr>
<tr>
<td>Stage</td>
<td></td>
<td></td>
<td>.32</td>
</tr>
<tr>
<td>IA1</td>
<td>872 (56.8%)</td>
<td>852 (55.5%)</td>
<td></td>
</tr>
<tr>
<td>IA2</td>
<td>499 (32.5%)</td>
<td>535 (34.8%)</td>
<td></td>
</tr>
<tr>
<td>IA NOS</td>
<td>165 (10.7%)</td>
<td>149 (9.7%)</td>
<td></td>
</tr>
<tr>
<td>Histology</td>
<td></td>
<td></td>
<td>.99</td>
</tr>
<tr>
<td>Squamous</td>
<td>1,175 (76.5%)</td>
<td>1,170 (76.2%)</td>
<td></td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>223 (14.5%)</td>
<td>227 (14.8%)</td>
<td></td>
</tr>
<tr>
<td>Adenosquamous</td>
<td>27 (1.8%)</td>
<td>28 (1.8%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>111 (7.2%)</td>
<td>111 (7.2%)</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td>.84</td>
</tr>
<tr>
<td>1</td>
<td>190 (12.4%)</td>
<td>196 (12.8%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>200 (13.0%)</td>
<td>212 (13.8%)</td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>79 (5.1%)</td>
<td>84 (5.5%)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>1,067 (69.5%)</td>
<td>1,044 (68.0%)</td>
<td></td>
</tr>
<tr>
<td>Surgery type</td>
<td></td>
<td></td>
<td>.67</td>
</tr>
<tr>
<td>Total/pan/simple hyst</td>
<td>1,434 (93.4%)</td>
<td>1,427 (92.9%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>102 (6.6%)</td>
<td>109 (7.1%)</td>
<td></td>
</tr>
</tbody>
</table>

Number (%) is shown. Univariable analysis with Fisher’s exact test or chi-square test for P-values. * included high-grade tumors. Abbreviations: hyst, hysterectomy; mRH, modified hysterectomy; RH, radical hysterectomy; and NOS, not otherwise specified.
Appendix 9. Kaplan-Meier curves for women younger than 50 years of age with stage IA cervical cancer after propensity score matching. Log-rank test for $P$ values. Y-axis was truncated to 50–100% for panels A–D and 0–50% for panels E–F. Survival curves were constructed for cause-specific survival (A), overall survival (B), and cumulative mortality risk from cardiovascular disease (C) and other chronic disease (D) for women younger than 50 years of age with stage IA cervical cancer with no radiotherapy.

A. Stage IA (age < 50)

B. Stage IA (age < 50)

C. Stage IA (age < 50)

D. Stage IA (age < 50)