Supplementary Material 4. Meta-analysis results for association between presence of gallstone and the risk of AOVC by subgroups

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>No. of study</th>
<th>OR (95%CI) (^{1})</th>
<th>I(^2) value (%)</th>
<th>P for heterogeneity</th>
</tr>
</thead>
<tbody>
<tr>
<td>All studies</td>
<td>5</td>
<td>3.28 (1.33-8.11)</td>
<td>93.3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Study design</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort study</td>
<td>1</td>
<td>2.30 (1.00-5.29)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Case-control study</td>
<td>4</td>
<td>3.56 (1.20-10.54)</td>
<td>95.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>3.60 (1.70-7.62)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>3.30 (1.41-7.70)</td>
<td>43.2</td>
<td>0.185</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>2</td>
<td>7.23 (2.49-21.00)</td>
<td>88.0</td>
<td>0.004</td>
</tr>
<tr>
<td>Non-Asia (^2)</td>
<td>3</td>
<td>1.57 (1.28-1.92)</td>
<td>0.0</td>
<td>0.608</td>
</tr>
<tr>
<td><strong>Study period</strong> (^3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before 2000</td>
<td>1</td>
<td>1.88 (0.61-5.79)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Around 2000</td>
<td>2</td>
<td>2.46 (0.91-6.61)</td>
<td>92.1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>After 2000</td>
<td>1</td>
<td>12.47 (7.37-21.10)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No record</td>
<td>1</td>
<td>2.30 (1.00-5.29)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Measure of gallstone</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical record with imaging</td>
<td>2</td>
<td>7.23 (2.49-21.00)</td>
<td>88.0</td>
<td>0.004</td>
</tr>
<tr>
<td>Medical record without imaging</td>
<td>3</td>
<td>1.57 (1.28-1.92)</td>
<td>0.0</td>
<td>0.608</td>
</tr>
<tr>
<td><strong>Study quality</strong> (^4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Results are presented as OR (95% confidence interval).
\(^2\) Excluding studies with questionnaire reports.
\(^3\) Excluding studies with cross-sectional designs.
\(^4\) Studies with no available quality assessment.
<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>OR</th>
<th>95% CI</th>
<th>NOS</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>High NOS</td>
<td>4</td>
<td>4.18</td>
<td>1.79-9.80</td>
<td>83.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Low NOS</td>
<td>1</td>
<td>1.52</td>
<td>1.23-1.88</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Adjustment for age, yes</td>
<td>4</td>
<td>2.29</td>
<td>1.26-4.17</td>
<td>77.0</td>
<td>0.005</td>
</tr>
<tr>
<td>Adjustment for sex, yes</td>
<td>3</td>
<td>2.39</td>
<td>1.17-4.91</td>
<td>84.6</td>
<td>0.001</td>
</tr>
<tr>
<td>Adjustment for education, yes</td>
<td>1</td>
<td>4.20</td>
<td>2.50-7.06</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

AOVC, ampulla of Vater cancer; OR, odds ratio; NOS, Newcastle-Ottawa Scale.

1 OR (Odds ratio) refers to summary estimate of effects based on random effects model. 2 Non-Asia including U.S. and European areas. 3 Study period is defined by the study’s starting point (a) and ending point (b). Before 2000, (a) and (b) are both before 2000; Around 2000, (a) is before 2000 but (b) is after 2000; After 2000, (a) and (b) are both after 2000. 4 The quality score equal or more than median value was judged as high NOS (≥7).