**Supplemental Table 1.** The quality of the included cohort studies assessed by NOS

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Selection | | | |  | Comparability |  | Outcome | | |  |
| Study | Representativeness of the exposed cohort | Selection of the non exposed cohort | Ascertainment of exposure | Demonstration that outcome of interest was not present at start of study |  | Control for important factor |  | Assessment of outcome | Sufficiency of follow-up for outcomes | Adequacy of follow up of cohorts | Scores |
| Rosário (2006) | ☆ | ☆ | ☆ | ☆ |  | - |  | ☆ | ☆ | - | 6 |
| Antunes (2013) | ☆ | ☆ | ☆ | ☆ |  | - |  | ☆ | ☆ | - | 6 |
| Ito (2015) | ☆ | ☆ | ☆ | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 8 |
| Bauer (2013) | ☆ | ☆ | ☆ | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 8 |
| Salih (2018) | ☆ | ☆ | ☆ | ☆ |  | - |  | ☆ | - | - | 5 |
| Vaiman (2008) | ☆ | ☆ | ☆ | - |  | - |  | ☆ | ☆ | - | 5 |
| Lee (2014) | ☆ | ☆ | ☆ | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 8 |
| Niepomniszcze (2001) | ☆ | ☆ | ☆ | ☆ |  | - |  | ☆ | ☆ | - | 6 |
| Phitayakorn(2008) | ☆ | ☆ | ☆ | - |  | - |  | ☆ | ☆ | - | 5 |
| Piper (2005) | ☆ | ☆ | ☆ | ☆ |  | - |  | ☆ | - | ☆ | 6 |
| Spanheimer(2011) | ☆ | ☆ | ☆ | - |  | - |  | ☆ | - | - | 4 |
| Wormald (2008) | ☆ | ☆ | ☆ | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 8 |
| Wadstrom (1999) | ☆ | ☆ | - | - |  | - |  | - | ☆ | - | 3 |
| Tina Toft (2014) | ☆ | ☆ | ☆ | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 8 |

**Supplemental Table 2.** The quality of the included case control studies assessed by NOS

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Selection | | | |  | Comparability |  | Outcome | | |  |
| Study | Adequate definition of cases | Representativeness of the cases | Selection of Controls | Definition of Controls |  | Control for important factor |  | Ascertainment of exposure | Same method of ascertainment for cases and controls | Non-Response rate | Scores |
| Chotigavanich(2016) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Akkari (2014) | - | ☆ | - | ☆ |  | - |  | ☆ | ☆ | - | 4 |
| Beisa (2015) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Chen (2019) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | ☆ | 8 |
| Ha (2016) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Ergul (2014) | ☆ | ☆ | - | ☆ |  | - |  | ☆ | ☆ | - | 5 |
| Hirsch (2013) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Cho (2011) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Rathi (2017) | - | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Lee (2019) | ☆ | - | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Koh (2008) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Seiberling(2007) | ☆ | - | - | ☆ |  | - |  | ☆ | ☆ | - | 4 |
| Stoll (2009) | ☆ | ☆ | - | - |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Su (2009) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Tomoda (2011) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Chong (2019) | ☆ | ☆ | - | ☆ |  | - |  | ☆ | ☆ | - | 5 |
| Ahn (2019) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Ahn (2016) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Chu (2010) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| De Carlucci (2008) | ☆ | ☆ | - | ☆ |  | ☆ |  | ☆ | ☆ | - | 6 |
| Attaallah (2015) | - | ☆ | - | - |  | - |  | ☆ | ☆ | - | 3 |
| Ha (2019) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| McHenry(2000) | ☆ | - | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Miller (2006) | ☆ | - | - | ☆ |  | - |  | ☆ | ☆ | - | 4 |
| Moon (2008) | - | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Morris (2013) | - | ☆ | - | ☆ |  | - |  | ☆ | ☆ | - | 4 |
| Ng (2018) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Noureldine (2013) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Park (2015) | - | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Park (2017) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Beiša (2011) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Said (2013) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Al-Shalhoub(2017) | ☆ | - | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 6 |
| Lang (2017) | ☆ | ☆ | - | ☆ |  | ☆☆ |  | ☆ | ☆ | - | 7 |
| Johner (2011) | ☆ | ☆ | - | ☆ |  | - |  | ☆ | ☆ | - | 5 |
| Cheung (1986) | ☆ | ☆ | - | ☆ |  | - |  | - | - | - | 3 |

**Supplemental Table 3.** The quality of the included randomized controlled trial assessed by Cochrane

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Study | Random sequence generation | Allocation concealment | Blinding | Incomplete outcome data | Selective reporting | Other sources of bias |
| Sancho (2012) | Low risk | Low risk | Unclear | Low risk | Unclear | Low risk |