**SUPPLEMENTARY DATA**

**Appendix 1.Assessment of risk of bias in the included studies using Cochrane criteria for RCTs**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study (trial) year** | **Sequence** | **Allocation** | **Blinding of** | **Blinding of** | **Incomplete** | **Selective** | **Other** |
|  | **generation** | **concealment** | **participants** | **outcome** | **outcome** | **outcome** | **bias** |
|  |  |  | **and personnel** | **assessment** | **data** | **reporting** |  |
| Kjekshus (CORONA) 2007 | L | L | L | U | L | L | L |
| Tevazzi (the GISSI-HF trial) 2008 | L | L | L | L | L | L | L |

Legend: L: low risk of bias; H: high risk of bias; U: unclear risk of bias.

**Appendix 2. Assessment of risk of bias in the included studies using Newcastle-Ottawa Quality Assessment Scale (NOS) for cohort studies**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study, year** | **Selection** | **Selection** | **Selection** | **Selection** | **Comparability** | **Exposure** | **Exposure** | **Exposure** | **Quality** |
|  | **1** | **2** | **3** | **4** | **1** | **1** | **2** | **3** |  |
| Horwich et al. 2004 | a) | a) | a) | a) | a) | b) | a) | b) | Good |
| Sola et al. 2005 | b) | a) | a) | a) | b) | a), b) | a) | a) | Good |
| Fukuta et al 2005 | a) | a) | b) | a) | b) | b) | a) | b) | Good |
| Hong et al. 2005 | b) | a) | b) | a) | b) | b) |  | a) | Good |
| Go et al. 2006 | b) | a) | a) | b) | a) | b) | a) | b) | Good |
| Huan et al. 2007 | c) | a) | b) | a) | b) | d) | a) | b) | Good |
| Coleman et al. 2008 | b) | a) | d) | b) | b) | d) | a) | b) | Fair |
| Roik et al. 2008 | a) | a) | b) | b) | b) | b) | a) | a) | Good |
| Gomez-Soto et al. 2010 | a) | a) | c) | b) | b) | b) | a) | a) | Good |
| Kaneko et al. 2013 | c) | b) | c) | a) | b) | a) | a) | b) | Fair |
| Yap et al. 2015 | c) | a) | b) | a) | a) | b | d) | b) | Fair |
| Nochioka et al. 2015 | a) | a) | b) | a) | a) | b) | a) | b) | Good |
| Alehagen U et al.2015 | a) | a) | b) | a) | b) | a) | a) | b) | Good |
| Alehagen et al. 2015 | b) | a) | b) | a) | b) | a) | a) | b) | Good |
| Tsujimoto et al. 2018 | a) | b) | a) | a) | a) | a) | a) | b) | Good |

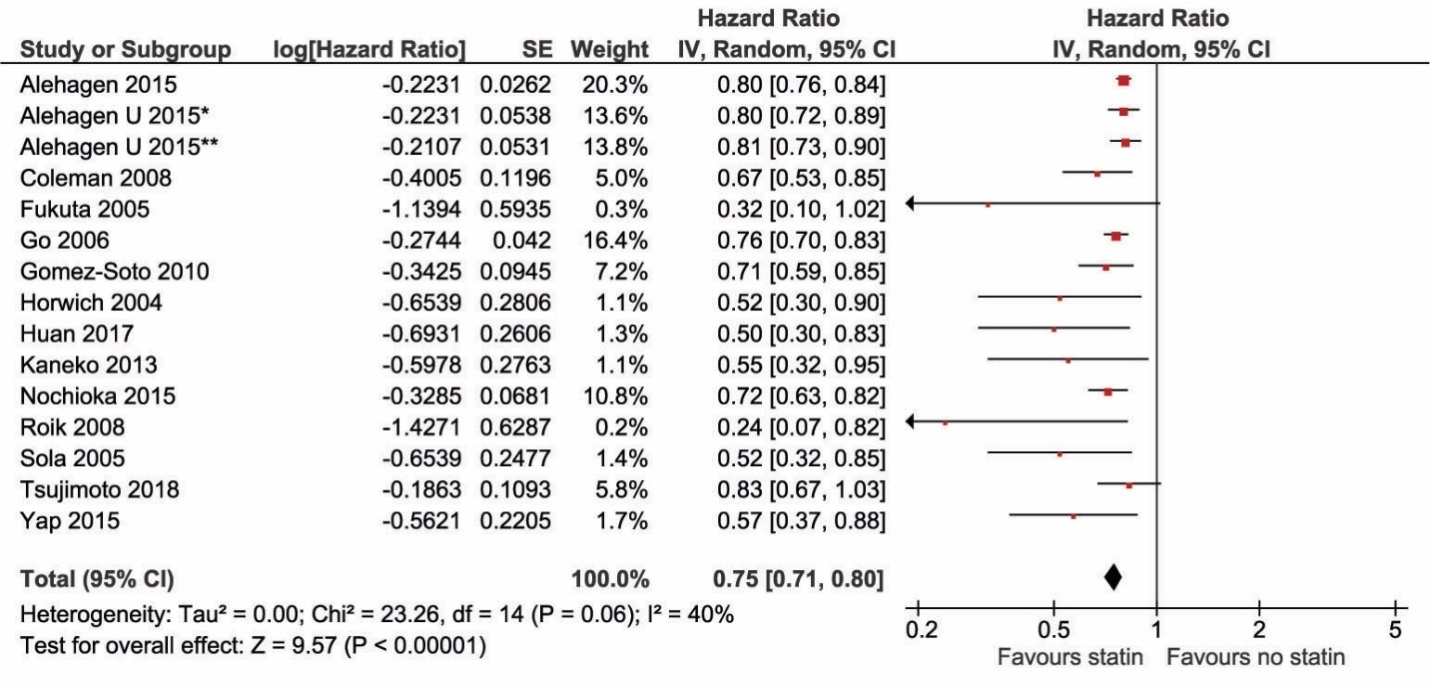
Legend: NOS: Selection- 1: a),b) one star, c), d) no star; Selection- 2: a) one star, b, c) no star; Selection- 3: a), b) one star, c), d), e) no star, Selection- 4: a) one star, b) no star; Comparability: a), b) one star, c) no star; Exposure-1: a),b) one star, c), d), e) no star; Exposure-2: a) one star, b) no star; Exposure-2**:** a),b) one star, c), d), no star.

**Good quality**: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain

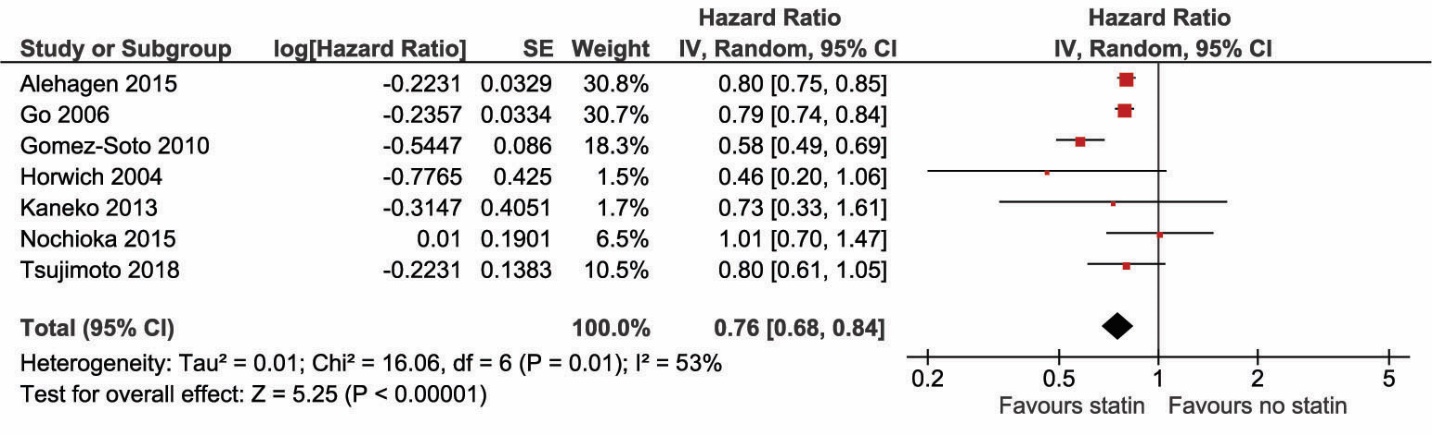
**Fair quality:** 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain

**Poor quality**: 0 or 1 star in selection domain OR 0 stars in comparability domain OR 0 or 1 stars in outcome/exposure domain

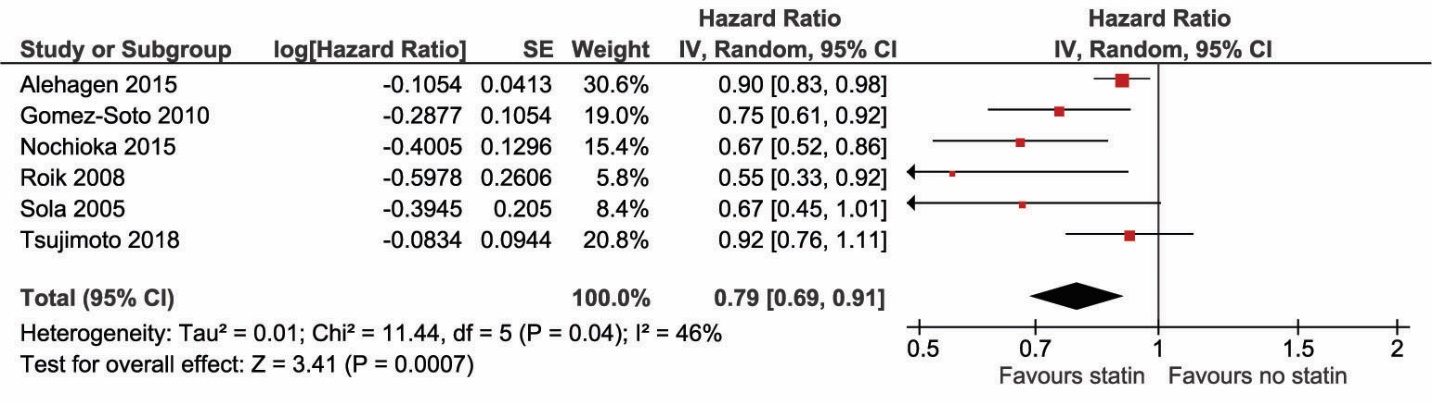
**Figure S1.** Association of statin versus non-statin use with all-cause mortality in heart failure only in cohort studies.



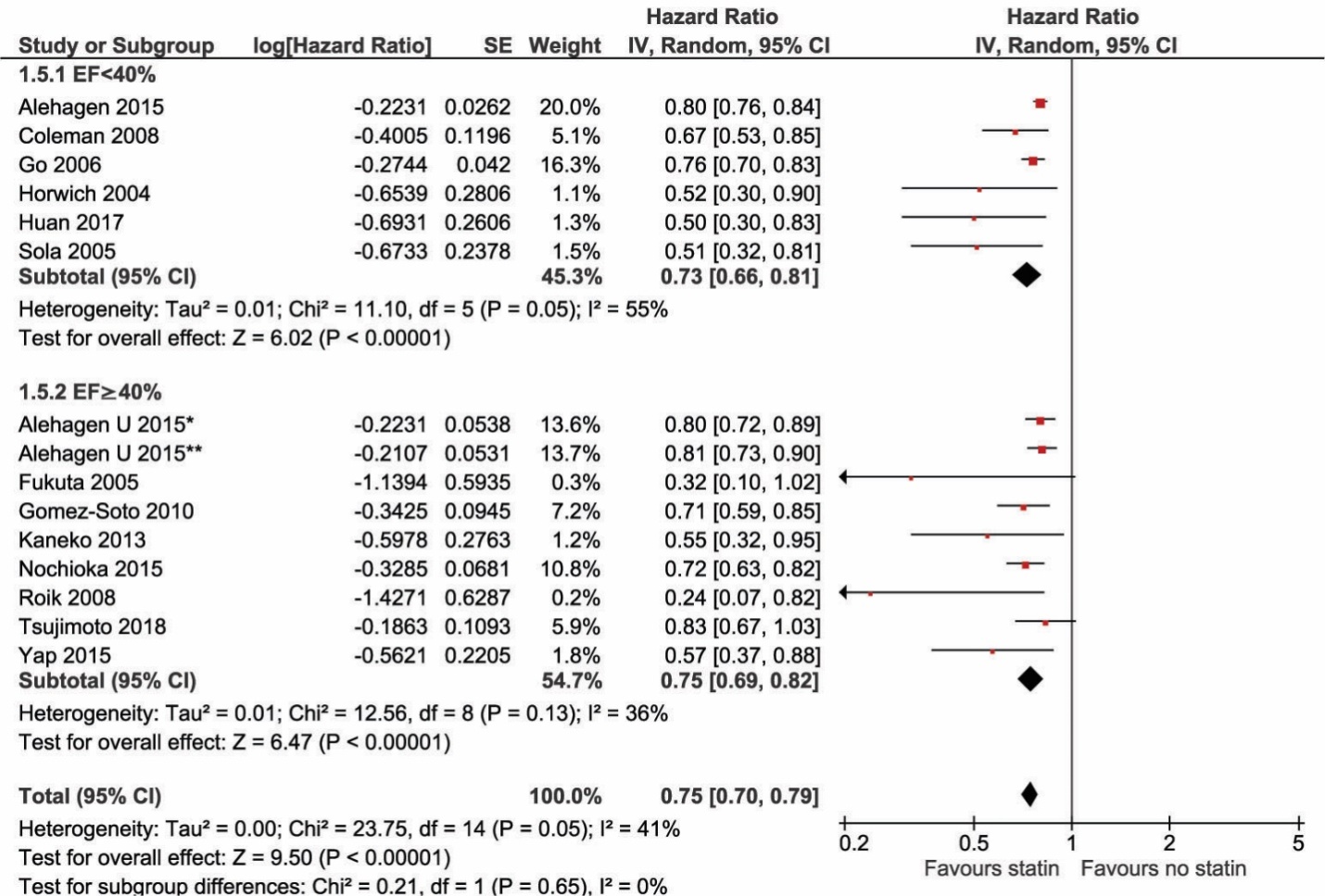
**Figure S2.** Association of statin versus non-statin use with CV mortality in heart failure only in cohort studies.



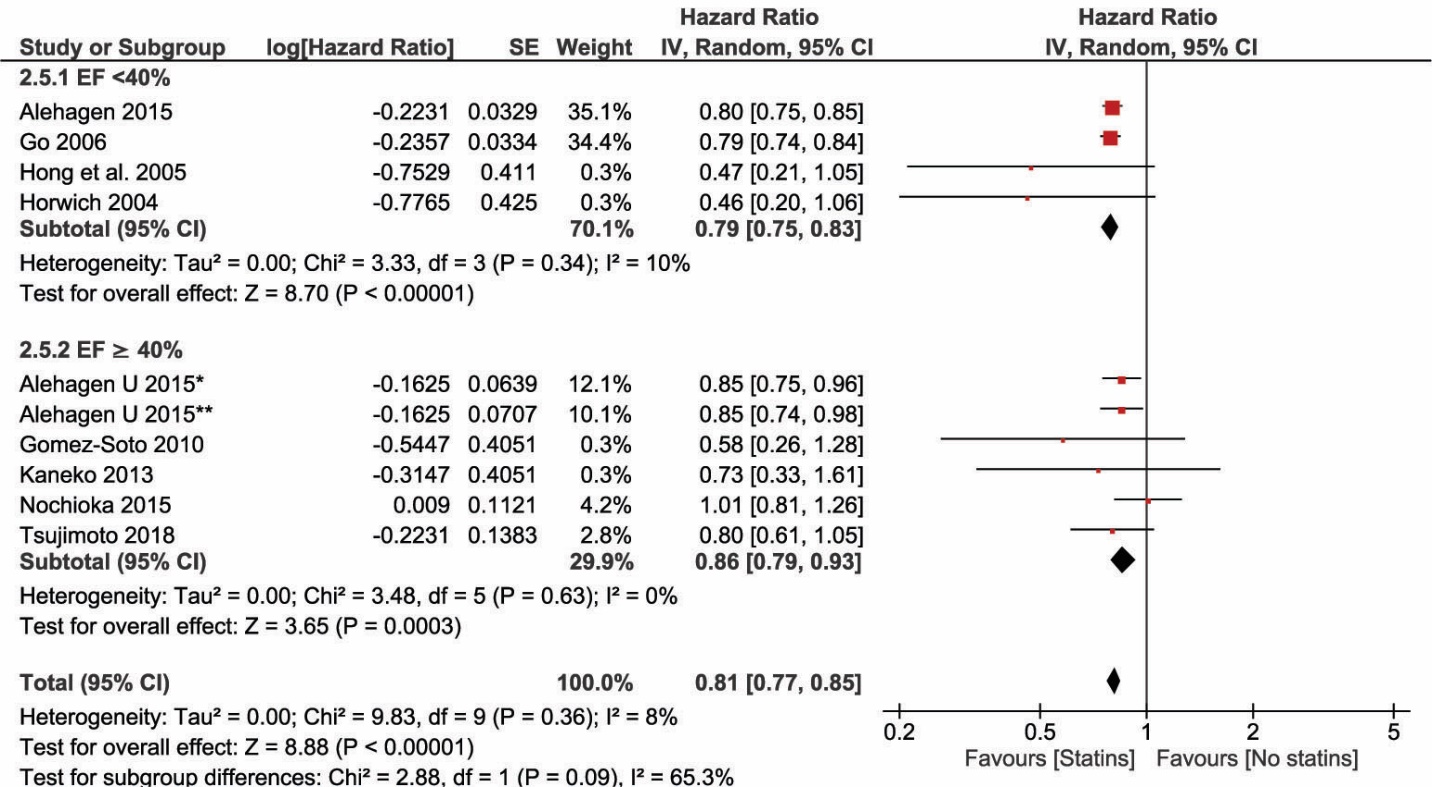
**Figure S3.** Association of statin versus non-statin use hospitalization in heart failure only in cohort studies.



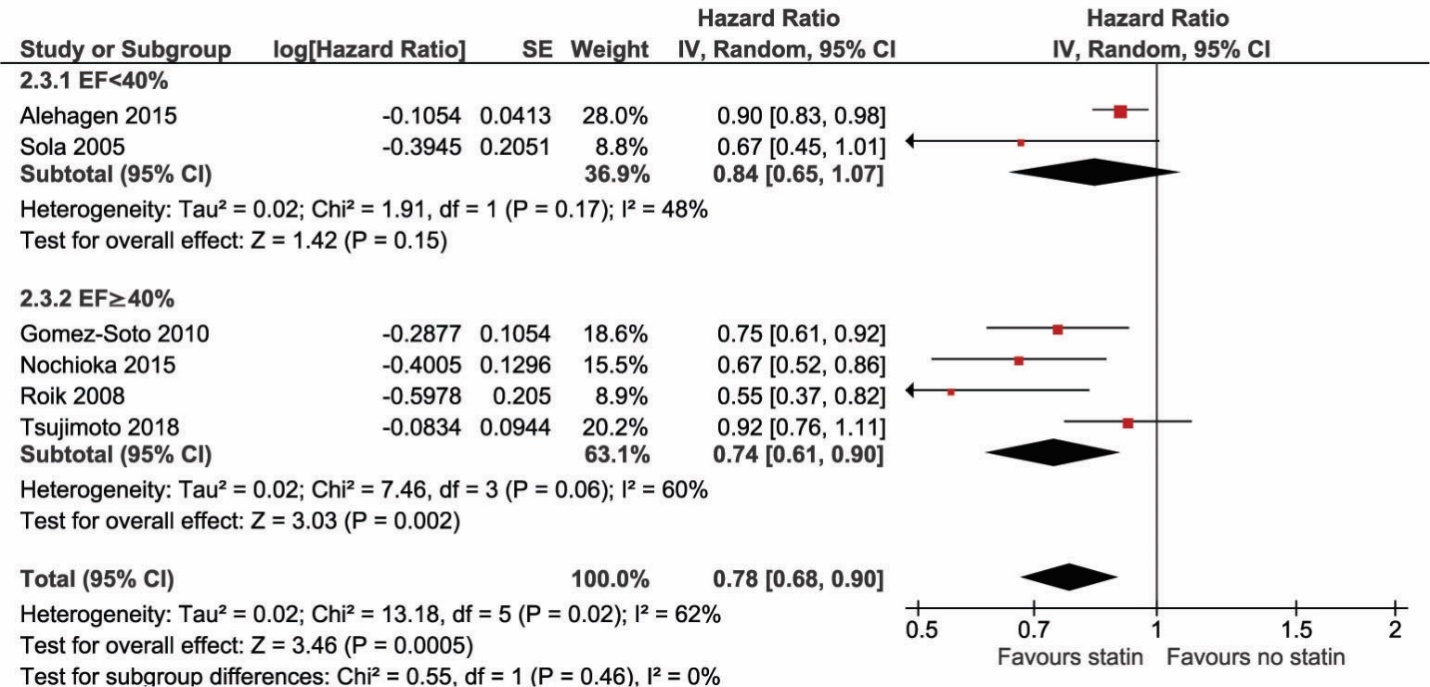
**Figure S4.** Association of statin versus non-statin use with all-cause mortality by type of heart failure only in cohort studies.

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**Figure S5.** Association of statin versus non-statin use with CV mortality by type of heart failure only in cohort studies.



**Figure S6.** Association of statin versus non-statin use with hospitalization by type of heart failure only in cohort studies.



**Table S1.**Assessment of risk of bias in the included studies using Cochrane criteria for RCTs

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study (trial) year** | **Sequence** | **Allocation** | **Blinding of** | **Blinding of** | **Incomplete** | **Selective** | **Other** |
|  | **generation** | **concealment** | **participants** | **outcome** | **outcome** | **outcome** | **bias** |
|  |  |  | **and personnel** | **assessment** | **data** | **reporting** |  |
| Kjekshus (CORONA) 2007 | L | L | L | U | L | L | L |
| Tevazzi (the GISSI-HF trial) 2008 | L | L | L | L | L | L | L |

*Legend: L: low risk of bias; H: high risk of bias; U: unclear risk of bias.*

**Table S2.** Assessment of risk of bias in the included studies using Newcastle-Ottawa Quality Assessment Scale (NOS) for cohort studies.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study, year** | **Selection** | **Selection** | **Selection** | **Selection** | **Comparability** | **Exposure** | **Exposure** | **Exposure** | **Quality** |
|  | **1** | **2** | **3** | **4** | **1** | **1** | **2** | **3** |  |
| Horwich et al. 2004 | a) | a) | a) | a) | a) | b) | a) | b) | Good |
| Sola et al. 2005 | b) | a) | a) | a) | b) | a), b) | a) | a) | Good |
| Fukuta et al 2005 | a) | a) | b) | a) | b) | b) | a) | b) | Good |
| Hong et al. 2005 | b) | a) | b) | a) | b) | b) |  | a) | Good |
| Go et al. 2006 | b) | a) | a) | b) | a) | b) | a) | b) | Good |
| Huan et al. 2007 | c) | a) | b) | a) | b) | d) | a) | b) | Good |
| Coleman et al. 2008 | b) | a) | d) | b) | b) | d) | a) | b) | Fair |
| Roik et al. 2008 | a) | a) | b) | b) | b) | b) | a) | a) | Good |
| Gomez-Soto et al. 2010 | a) | a) | c) | b) | b) | b) | a) | a) | Good |
| Kaneko et al. 2013 | c) | b) | c) | a) | b) | a) | a) | b) | Fair |
| Yap et al. 2015 | c) | a) | b) | a) | a) | b | d) | b) | Fair |
| Nochioka et al. 2015 | a) | a) | b) | a) | a) | b) | a) | b) | Good |
| Alehagen U et al.2015 | a) | a) | b) | a) | b) | a) | a) | b) | Good |
| Alehagen et al. 2015 | b) | a) | b) | a) | b) | a) | a) | b) | Good |
| Tsujimoto et al. 2018 | a) | b) | a) | a) | a) | a) | a) | b) | Good |

Legend: NOS: Selection- 1: a),b) one star, c), d) no star; Selection- 2: a) one star, b, c) no star; Selection- 3: a), b) one star, c), d), e) no star, Selection- 4: a) one star, b) no star; Comparability: a), b) one star, c) no star; Exposure-1: a),b) one star, c), d), e) no star; Exposure-2: a) one star, b) no star; Exposure-2**:** a),b) one star, c), d), no star.

**Good quality**: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain

**Fair quality:** 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain

**Poor quality**: 0 or 1 star in selection domain OR 0 stars in comparability domain OR 0 or 1 stars in outcome/exposure domain