**METHODOLOGICAL QUALITY APPRAISAL**

The methodology checklist for prognostic studies used in this review is provided by the NICE (2012), and was originally adapted from Hayden et al. (2006).   
(Y = Yes, N = No, U = Unknown) O’Neil-Pirozzi

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Cuthbert, 2015a | Cuthbert, 2015b | Ponsford, 2015 | Grauwmeijer, 2017 | Odgaard, 2017 | Palm, 2017 | Ruet, 2017 | DiSanto, 2018 | Stromberg, 2018 | Awan, 2019 | Hart, 2019 | Klyce, 2019 | Pretz, 2019 | Sima, 2019 | Singh, 2019 | Arango-Lasprilla, 2020 | Howe, 2020 | Iida, 2021 | O’Neil-Pirozzi, 2021 |
| The **study sample** represents the population of interest with regard to key characteristics | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y |
| **Loss to follow-up** is unrelated to key characteristics (that is, the study data adequately represent the sample) | Y | U | U | Y | U | Y | Y | Y | U | U | Y | U | U | Y | U | U | U | U | U |
| The **prognostic factor** of interest is adequately measured in study participants | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| The **outcome** of interest is adequately measured in study participants | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | U | Y |
| Important potential **confounders** are appropriately accounted for | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | N | Y |
| The **statistical analysis** is appropriate for the design of the study | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | Y |

**USED EVALUATION CRITERIA PER CHECKLIST ITEM FOR THE APPRAISAL OF STUDY QUALITY**

**1.1 The study sample represents the population of interest with regard to key characteristics, sufficient to limit potential bias to the results**

* Are the sampling frame and recruitment adequately described, possibly including methods to identify the sample (number and type used; for example, referral patterns in healthcare), period of recruitment and place of recruitment (setting and geographical location)?
* Are inclusion and exclusion criteria adequately described (for example, including explicit diagnostic criteria or a description of participants at the start of the follow-up period)?
* Is the baseline study sample (that is, individuals entering the study) adequately described with respect to key characteristics?

**1.2 Loss to follow-up is unrelated to key characteristics (that is, the study data adequately represent the sample), sufficient to limit potential bias**

* Are reasons for loss to follow-up provided?
* Are the key characteristics of participants lost to follow-up adequately described?
* Are there any important differences in key characteristics and outcomes between participants who completed the study and those who did not?

**1.3 The prognostic factor of interest is adequately measured in study participants, sufficient to limit potential bias**

* Is a clear definition or description of the prognostic factor(s) measured provided (including dose, level, duration of exposure, and clear specification of the method of measurement)?

**1.4 The outcome of interest is adequately measured in study participants, sufficient to limit potential bias**

* Is a clear definition of the outcome of interest provided, including duration of follow-up?

**1.5 Important potential confounders are appropriately accounted for, limiting potential bias with respect to the prognostic factor of interest**

* Are important potential confounders accounted for in the analysis (that is, appropriate adjustment)?

**1.6 The statistical analysis is appropriate for the design of the study, limiting potential for the presentation of invalid results**

* Is the selected model adequate for the design of the study?