**Appendix 2: Quality assessment of the selected studies**

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| --- | --- | --- | --- | --- |
| (1A) using the Modified Newcastle–Ottawa Scale for cross sectional studies (1–3) | | | | |
| **Studies** | **Selection (score=5⋆)** | **Comparability (score=2⋆)** | **Outcome (score=3⋆)** | **Total (Max score=10⋆)** |
| **Deschasaux-Tanguy et al., 2020** (4)**.** | ⋆⋆⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 9⋆ |
| **Dondi , et al., 2020** (6) | ⋆⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 8⋆ |
| **Gama de Matos et al., 2020** (7) | ⋆⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 8⋆ |
| **Ismail et al., 2020**(8) | ⋆⋆⋆⋆⋆ | ⋆ | ⋆⋆ | 8⋆ |
| **Ozden et al., 2020** (9) | ⋆⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 8⋆ |
| **Zachary et al., 2020** (10)**.** | ⋆⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 8⋆ |
| **Chopra et al., 2020**(11) | ⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 7⋆ |
| **DiRenzo et al., 2020** (12) | ⋆⋆⋆⋆ | ⋆ | ⋆⋆ | 7⋆ |
| **Dragun et al., 2020**(13) | ⋆⋆⋆⋆ | ⋆ | ⋆⋆ | 7⋆ |
| **Giustino et al., 2020** (14) | ⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 7⋆ |
| **Jiminez et al., 2020c**(15) | ⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 7⋆ |
| **Kriaucione et al., 2020** (16) | ⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 7⋆ |
| **Adibelli et al., 2020** (17) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| **Ahmed Iraq et al., 2020** (18) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| **Athanasiaidis et al., 2020** (19) | ⋆⋆⋆ | ⋆⋆ | ⋆ | 6⋆ |
| **Błaszczyk-Bebenek et al., 2020** (20) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| **Chague et al., 2020, France** (5) | ⋆⋆⋆⋆ | - | ⋆⋆ | 6⋆ |
| **Dogas et al., 2020** (21) | ⋆⋆⋆ | ⋆ | ⋆⋆ | 6⋆ |
| **Drywein et al., 2020** (22) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| **He et al., 2020** (23) | ⋆⋆⋆ | ⋆ | ⋆⋆ | 6⋆ |
| **Ismail, MENA et al., 2020** (24) | ⋆⋆⋆⋆ | ⋆ | ⋆ | 6⋆ |
| **Jia et al., 2020** (25) | ⋆⋆⋆⋆ | ⋆ | ⋆ | 6⋆ |
| **Malkawi, et al., 2020** (26) | ⋆⋆⋆⋆ | - | ⋆⋆ | 6⋆ |
| **Onmez turkey et al., 2020** (27) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| **Rogers et al., 2020** (28)**.** | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| **Sidor et al., 2020** (29)**.** | ⋆⋆⋆ | ⋆ | ⋆⋆ | 6⋆ |
| **De Luis Roman et al., 2020** (30) | ⋆⋆⋆ | ⋆ | ⋆ | 5⋆ |
| **Giacalone, et al., 2020** (32) | ⋆ | ⋆⋆ | ⋆ | 4⋆ |
| **Lopez -Moreno et al., 2020** (33) | ⋆ | ⋆⋆ | ⋆ | 4⋆ |
| **Elmacioglu, et al., 2020** (34) | ⋆ | ⋆⋆ | - | 3⋆ |
| **Fernandez- Rio et al., 2020**(35) | ⋆ | - | ⋆⋆ | 3⋆ |
| **Scarmozzino et al., 2020** (36)**.** | ⋆⋆ | - | ⋆ | 3⋆ |
| **Chaturvedi et al., 2020** (37) | ⋆ | ⋆ | ⋆ | 3\* |
| **Ghosal et al., 2020** (31) | - | - | ⋆ | 1⋆ |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (1B) using the Newcastle–Ottawa Scale for cohort studies/case control studies (3) | | | | |
| Studies | **Selection (score=4⋆)** | **Comparability (score=2⋆)** | **Outcome (score=3⋆)** | **Total (Max score=9⋆)** |
| Kang et al., 2021 (38) | ⋆⋆⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 9⋆ |
| Mason et al., 2021 (39) | ⋆⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 8⋆ |
| Marchitelli et al., 2020 (40) | ⋆⋆⋆ | ⋆⋆⋆⋆ | ⋆ | 8⋆ |
| Di Santo et al., 2020 (41) | ⋆⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 8⋆ |
| Karatas et al., 2021 (42) \*\* | ⋆⋆⋆ | ⋆⋆ | ⋆⋆⋆ | 8⋆ |
| Keel et al., 2020 (43). | ⋆⋆⋆⋆ | ⋆ | ⋆⋆⋆ | 8⋆ |
| Martinez de quell, et al., 2020 (44) | ⋆⋆ | ⋆ | ⋆⋆⋆ | 6⋆ |
| Mitchell et al., 2020 (45). | ⋆⋆⋆⋆ | ⋆⋆ | ⋆ | 7⋆ |
| Pietrobelli et al., 2020 (46). | ⋆⋆⋆⋆ | ⋆⋆ | ⋆ | 7⋆ |
| Shah et al., 2020 (47) | ⋆⋆⋆ | ⋆⋆ | ⋆⋆ | 7⋆ |
| Pellegrini et al., 2020 (48). | ⋆⋆⋆⋆ | ⋆ | ⋆ | 6⋆ |
| Romero Blanco et al., 2020 (49). | ⋆⋆⋆⋆ | ⋆ | ⋆ | 6⋆ |
| Gentile et al., 2020 (50) | ⋆⋆⋆ | - | ⋆⋆⋆ | 6⋆ |
| Ruissen et al., 2020 (51) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| Cransac Miet et al., 2020 (52) | ⋆⋆ | ⋆⋆ | ⋆⋆ | 6⋆ |
| Sankar et al., 2020 (53) | ⋆⋆⋆ | - | ⋆ | 4⋆ |
| Ghosh et al., 2020 (54) | ⋆⋆ | - | ⋆ | 3⋆ |

\*\* Case –control study

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