Supplemental Material:

Risk of Bias using “Downs and Black Checklist of Methodological Quality”

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Albright 2005 | Albright 2009 | Albright 2015 | Cramp and Bray 2011 | Evenson2009 | Groth and David 2011 | Mailey 2017 | Saligheh2016 | Thomson2018 | Vladutiu2014 |
| Reporting |
| 1. Is the hypothesis/aim/objective of the study clearly described? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. Are the main outcomes to be measured clearly described in the Introduction or Methods? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. Are the characteristics of the patients included in the study clearly described? | 1 | 1 | 1 | 1 | 1 | 1 | 0  | 1 | 1 | 1 |
| 4. Are the interventions of interest clearly described? | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5. Are the distributions of principal confounders in each group of subjects to be compared clearly described? | 0 | 1 | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6. Are the main findings of the study clearly described? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7. Does the study provide estimates of the random variability in the data for the main outcomes? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8. Have all important adverse events that may be a consequence of the intervention been reported? | 0 | 0 | 0  | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 9. Have the characteristics of patients lost to follow-up been described? | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10. Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001? | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| External Validity  |
| 11. Were the subjects asked to participate in the study representative of the entire population from which they were recruited? | 0 | 0 | 0 | 1  | 0 | 0 | 0 | 0 | 1 | 0 |
| 12. Were those subjects who were prepared to participate representative of the entire population from which they were recruited? | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13. Were the staff, places, and facilities where the patients were treated, representative of the treatment the majority of patients received?  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Bias |
| 14. Was an attempt made to blind study subjects to the intervention they have received?  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 15. Was an attempt made to blind study subjects to the intervention they have received? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16. If any of the results of the study were based on “data dredging”, was this made clear? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17. In trials and cohort studies, do the analyses adjust for different lengths of follow-up of patients, or in case-control studies, is the time period between the interventions and outcome the same for cases and controls?  | 0 | 1  | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| 18. Were the statistical test used to assess the main outcomes appropriate? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 19. Was compliance with the intervention/s reliable? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 20. Were the main outcome measures used accurate (valid and reliable)? | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Confounding  |
| 21. Were the patients in different interventions groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited from the same population? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 22. Were study subjects in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited1 over the same period? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 23. Were study subjects randomized to intervention groups? | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| 24. Was the randomized intervention assignment concealed from both patients and health care staff until recruitment was complete and irrevocable? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 0 |
| 25. Was there adequate adjustment for confounding analyses from which the main findings were drawn? | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0  | 0 | 1 |
| 26. Were losses of patients to follow-up taken into account? | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |

1= yes

0= no/unable to determine