

Basic Approach to Reviewing an Article

Hypothesis

1. Is there a hypothesis?
2. Is the hypothesis based on sound physiology/principles?
3. Does the hypothesis make sense?
4. Is the hypothesis important/new/expansion of our current knowledge?
5. Can the hypothesis be answered by this or any study?

Selection of groups/Study design

1. Is there a control/non intervention group? Should there be one?
2. What are the biases associated with the selection criteria?
(*ex: ARDS with immune compromised patients has a lower success rate than other groups*)
3. Have they picked a patient population which is too restrictive/homogenous?
4. Is the study design appropriate to answer the questions asked?
(*ex: prospective vs. retrospective, randomized vs. non-randomized etc*)

Methods

Data collection/intervention

1. Are they using accepted techniques?
2. Are they using new techniques? If so are they valid/correlated to gold standard?
3. Is there a specific intervention to be evaluated, is this intervention appropriately controlled?
4. Will the measurement techniques be sensitive enough to discriminate between accepting and rejecting the hypothesis?
5. What observational/measurement bias is there? Does this effect the ability to discriminate between accepting and rejecting the hypothesis?
6. Are the measurement intervals appropriate?
7. Are they controlling enough of the variables or are there too many confounding variables?

Data analysis

1. Can the statistics answer the questions that is asked?
2. Are they using the appropriate statistics for the data:
Unpaired t test or paired t test not great.
Analysis of variance/multiple analysis of variance good, linear regression good?

Results

1. Do the results support the hypothesis?
2. Is the standard deviation such that although there is a difference it is difficult to discriminate between success/failure?
3. Are the results presented in a clear logical manner?
4. Have they left out important data that may provide insight?
5. Do the results select out segments of the study population which are too small to provide reasonable conclusions or which circumvent randomization?

Discussion - Should be an interpretation of the results

1. Is the discussion well organized, well written?
2. Does the discussion go beyond restating the data to include interpretation of the data?
3. Do they answer why certain findings are present?
4. Do they have a clear understanding of the limitations of their study?
5. Does the discussion go too far i.e. do they make conclusions not supported by the data?
6. Will this study change your practice?
7. Is there a conclusion/recommendation?
8. Are the author's conclusions consistent with their results or are they overly speculative?
9. Are inappropriate or highly speculative practice guidelines advanced? ☐