Measuring improvement in dyspnoea: absolute or relative?

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Relative or absolute?

- The MCID for absolute change for chronic symptom:
  - 5mm/11.3mm/18mm (distribution)
  - 9mm (patient anchor)
- The MCID for relative change is not known
- Empirical changes used varying 10 – 25%
- Which should we use in reporting and in study design?
- CONSORT recommend both in abstract and text of study reports
- Review: relative values only in abstract (88%) and main text (75%)

King, N. B., Harper, S., and Young, M. E. Use of relative and absolute effect measures in reporting health inequalities: structured review. *BMJ* 345: e5774, 2012

Measurement of MCID

- Distribution method
  - Effect size: change in mean score from baseline/SD baseline scores
  - smaller group data variability indicates greater "clinical precision" in the perception of study measure by the individuals studied
  - different study populations should have a similar level of precision over the perception of study measure and in a change in that measure

- Patient anchor
  - Global impression of change
  - Symptom relief score
  - Choice of one intervention over another

Guyatt GH et al Methods to explain the clinical significance of health status measures. Mayo Clin Proc 2002 Apr;77(4):371-83.

Methods

- Analysis of pooled data from four clinical trials of opioids for breathlessness (213 datasets from 178 participants).

  o The variability of difference from baseline against baseline measure for absolute and ratio values was examined and displayed graphically.

  o The MCID was estimated using a patient anchor (blinded study arm preference).

Patient preference anchor

- 113 preference responses for 93 participants.

- Comparison of preferred and unpreferred arm ratios showed a difference of −14.4%.

- Skewed data: calculation using log ratios gave a difference of −20.5% (after anti-log).

- Therefore patient anchor MCID (relative)

   = 14-21%

NB cannot calculate effect size using Dd/SD of Db for a relative value

Conclusions

- Reported outcomes should be presented as both absolute and relative measures

- Use absolute measures for sample size calculation.
  - uniformity of variation
  - ability to calculate effect size

- The MCID in chronic breathlessness expressed as a relative reduction is 15-20% of baseline measures

- Next question: do patients perceive an improvement of 11.3mm as moderate irrespective of baseline intensity?