EVIDENCE FOR EXERCISE TRAINING IN AUTONOMIC FUNCTION MODULATION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): A SYSTEMATIC REVIEW

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Aims
To summarize the current evidence concerning the effect of exercise training on autonomic function in patients with Chronic Obstructive Pulmonary Disease (COPD).

Methods
Following the Preferred Reporting Items for Systematic reviews and Meta Analysis (PRISMA) guidelines, a systematic search was performed in three electronic databases using a combination of predefined keywords regarding COPD/exercise training and rehabilitation/outcomes of autonomic function.

Results
- A total of 406 patients with COPD studied (279 ♂, %FEV1 predicted: 32±11 to 50±19)
- Types of training studied:
  - continuous exercise training
  - vigorous intensity (60–80% VO2 max) in majority of the studies
- Mean session duration: 30–40 min
- Number of sessions/week: min 3x/week
- Frequent methodological issues:
  - low sample sizes
  - substantial drop out

GRADE evidence synthesis
- Exercise training improves heart rate variability (time domain) and heart rate recovery measure (high level of evidence-A).
- Only limited evidence (Level D) supported exercise training in enhancing the baroreceptor sensitivity.
- Also, exercise training appears to have no significant influence on the frequency domain parameters of heart rate variability.

Conclusions
Exercise training only demonstrated limited beneficial effects for autonomic function modulation for patients with COPD. Nevertheless, future studies testing other exercise training modes with high methodological quality and large sample sizes are still necessary.

Acknowledgements:
Jibril Mohammed is on a PhD fellowship funded by the Tertiary Education Trust Fund, Nigeria. Jessica Van Oosterwijck is a postdoctoral research fellow funded by the Research Foundation - Flanders (FWO), Belgium.

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