Top Ten Things To Know
Clinical Cardiopulmonary Exercise Testing

1. Cardiopulmonary exercise testing (CPX) merges traditional exercise testing procedures (ECG, blood pressure, perceived exertion, etc.) with VO2 max, a measure of how effectively the body consumes oxygen during exercise.

2. CPX is a clinical standard of care in patients with unexplained excessive shortness of breath after exercise, those diagnosed with heart failure and those with suspected and confirmed pulmonary arterial hypertension or secondary pulmonary hypertension.

3. Using CPX has demonstrated that VO2max is an important independent predictor of survival and one of several variables that are highly prognostic in a number of patient populations.

4. Although research indicates the use of CPX is below standard expectations, one potential reason for lack of using CPX in clinically warranted situations is an inability for clinicians to easily identify and interpret the most relevant data.

5. Barriers to use include:
   a. current CPX consensus statements are very complex and don’t convey succinct, clinically-centered strategies to using CPX indices effectively;
   b. current CPX software packages generate an overwhelming abundance of data, which to most clinicians are incomprehensible.

6. Despite being underutilized, CPX has gained popularity not only due to the recognition of its clear value in the functional assessment of patients with CV, pulmonary and musculoskeletal disease/disorders, but also because technological advances (e.g. rapid response analyzers and computer-assisted data processing) have made this modality easier to use.

7. The authors identify key exercise testing variables and provide only succinct descriptions of their significance and normal values/responses in an easy to read table; variables are included in the one-page, universal CPX reporting form.

8. A universal cardiopulmonary exercise testing reporting form that is color coded is described to help clinicians use CPX by simplifying data interpretation, thereby increasing the clinical value of the data clinicians can collect when using CPX testing.

9. Further research is needed to increase support for the use of CPX in certain patient populations.

10. Additional investigations into the value of CPX in females also seem warranted across all patient populations that would benefit from this testing.


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