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題目 (Title):

心肺運動試驗在患有肌肉萎縮病變兒童和青少年的初步研究
(Cardiopulmonary Exercise Testing in Children and Adolescents With Dystrophinopathies: A Pilot Study)

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目的 (Purpose):

決定患有肌肉萎縮病變的兒童和青少年在心肺運動試驗時的運動反應
(To determine exercise response during cardiopulmonary exercise testing in children and adolescents with dystrophinopathies.)

方法 (Methods):

比較心肺運動試驗與一個標準化治療試驗流程的運動反應。
(Exercise response on the cardiopulmonary exercise test (CPET) was compared with a standard care test protocol.)

結果 (Results):

九位男童（年齡為 10.8±4.7 歲）參與本研究，包括 6 位患有貝克氏肌肉萎縮症 (Becker muscular dystrophy) 和 3 位裘馨氏肌肉萎縮症 (Duchenne muscular dystrophy)。CPET 與標準化治療試驗流程的可行性相似，且無嚴重不良事件發生。

在正常或僅輕度功能受損的受試者中，67%可以用 CPET 檢測到中度至重度之心肺運動的限制。

(Nine boys (aged 10.8 ± 4.7 years) with Becker muscular dystrophy (n = 6) and Duchenne muscular dystrophy (n = 3) were included. The feasibility of the CPET was similar to a standard care test protocol, and no serious adverse events occurred. In 67% of the subjects with normal or only mildly impaired functional capacity, the CPET could be used to detect moderate to severe cardiopulmonary exercise limitations.)

結論 (Conclusions):

對於僅輕度功能受損的青少年而言，CPET 是一個很有前景之成效指標，可以用來量測心肺運動限制。未來尚待進一步較大的樣本研究來確認本研究的結果，並探討 CPET 在患有肌肉萎縮病變的青少年之心肌病變(cardiomyopathy)長期追蹤和建構安全的運動計劃中的附加價值。

(The CPET seems to be a promising outcome measure for cardiopulmonary exercise limitations in youth with mild functional limitations. Further research with larger samples is warranted to confirm current findings and investigate the additional value of the CPET to longitudinal follow-up of cardiomyopathy and the development of safe exercise programs for youth with dystrophinopathies.)

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