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| **A comparison of peak cough flow (PCF) and peak expiratory flow (PEF) in children with neuromuscular disorders.**  |
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| **Introduction/Aim:** PCF is the gold standard to assess cough strength to determine if cough assistance is required. Both PCF and PEF require effort dependent maximal expiration. Our aim was to compare PCF and PEF recorded from spirometry in children with neuromuscular conditions. If PCF and PEF are demonstrated to be similar, busy laboratories can offer clinically relevant information using either test in children with neuromuscular conditions in a time efficient manner. Previous studies have presented a coefficient of determination of 0.53 and 0.65.**Methods:** Participants with a neuromuscular disease diagnosis < 19 years old with spirometry technique reported and crosschecked independently as Grade A, B or U (following the ATS/ ERS guidelines) by two respiratory scientists were included. All trials were performed on laboratory equipment (Vyaire Body BoxTM, Ultrasonic flow meter-based, or Vyaire PneumotachograhTM, Pneumotach flow meter-based; Germany). Both spirometry and PCF were completed on the same device. PCF was performed from total lung capacity (TLC). Statistical analysis was performed using Microsoft Excel (version 2307) to generate a Pearson correlation coefficient, scatter graph and Bland-Altman Plot.**Results:** 32 subjects (n=32, 6F) participated. Mean (SD; range) age was 15.2 (2.78; 7.2-18.3) years. Mean PEF (L/min) was 4.6 (2.06; 1.22-10.26) and mean PCF (L/min) was 4.87 (2.07; 1.38-10.82). PEF and PCF had a strong Pearsons’s correlation coefficient, r=0.97, n=32, p=0.005. The coefficient of determination was 0.94 and the limits of agreement were -0.71 (L/min) and 1.26 (L/min), with an average difference of 0.27 (L/min).**Conclusion:** Using the same equipment, the Pearson’s correlation coefficient was strong between PCF and PEF, and higher than previously published data. Spirometry testing is the more informative test for patients with neuromuscular disease. However, PCF remains a testing option due to its simplicity, especially for those with cognitive impairments, where performing spirometry correctly is not feasible. **Key Words:** Spirometry, Neuromuscular, Children**Nomination for New Investigator Award:**Yes**Grant Support:** Nil |