

Clinical Trial Overview

High-Frequency Chest Compression: Medically Fragile Children

A retrospective/prospective chart review evaluating high frequency chest compression (HFCC) compared with chest physiotherapy (CPT) in residential treatment center quadriplegic cerebral palsy (CP) patients with respiratory complications showed clinically important improvements with HFCC in all outcome measures.

Title	Plioplys AV, Lewis S, Kasnicka I. Pulmonary vest therapy in pediatric long-term care. <i>J Am Med Dir Assoc</i> 2002; 3:318-32.																						
Design	Retrospective/Prospective Chart Review																						
Method	<p>Seven children and young adults with quadriplegic cerebral palsy complicated by frequent pneumonias and living in two residential treatment facilities received HFCC therapy for 12 months. All served as their own controls. Outcomes were compared to a retrospective 12 months of CPT therapy. Patient characteristics included:</p> <ul style="list-style-type: none"> • Age > 7 years; < 29 years; median age = 19 years • All had G-tubes • Five had tracheostomies • Three had active seizure disorder <p>Retrospective clinical data was collected from daily records maintained according to facility protocols. Prospective data was collected for same parameters following 12 months of HFCC. Parameters included:</p> <ul style="list-style-type: none"> • Baseline CPT therapy schedules • Episodes of pneumonia • Hospitalizations • Seizures • Effective suctioning <p>* Data analysis was performed using the Wilcoxon Signed Rank Test, one-tailed test</p>																						
Results	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">12 months CPT</th> <th style="text-align: center;">12 months HFCC</th> <th style="text-align: center;">P value</th> </tr> </thead> <tbody> <tr> <td>Pneumonias</td> <td style="text-align: center;">36</td> <td style="text-align: center;">18</td> <td style="text-align: center;">P = 0.026</td> </tr> <tr> <td>Hospitalizations</td> <td style="text-align: center;">9</td> <td style="text-align: center;">3</td> <td style="text-align: center;">P = 0.160</td> </tr> <tr> <td>Seizures</td> <td style="text-align: center;">267</td> <td style="text-align: center;">43</td> <td style="text-align: center;">P = 0.125</td> </tr> <tr> <td>Effective suctioning</td> <td style="text-align: center;">4,825</td> <td style="text-align: center;">10,455</td> <td style="text-align: center;">P = 0.008</td> </tr> </tbody> </table> <p>After 12 months, HFCC showed reductions in pneumonias and hospitalizations. Suctioning was significantly more effective; seizure episodes declined sharply. HFCC was well tolerated and no adverse events were observed.</p>				12 months CPT	12 months HFCC	P value	Pneumonias	36	18	P = 0.026	Hospitalizations	9	3	P = 0.160	Seizures	267	43	P = 0.125	Effective suctioning	4,825	10,455	P = 0.008
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