

PULMONARY VEST THERAPY IN PEDIATRIC LONG-TERM CARE

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Introduction Pneumonias are common in children with quadriplegic cerebral palsy. Neuromuscular insufficiency produces inadequate clearance of pulmonary secretions. The ABI vest is approved to promote pulmonary clearance and is used extensively to treat cystic fibrosis. Vest therapy (VT) in cerebral palsy has not been previously investigated.

Methods 4 individuals who had frequent pulmonary infections were identified (age range: 14-28 y; 2 females, 2 males). All had severe quadriplegic cerebral palsy, were wheelchair bound, and were fed by gastrostomy tube. 2 had a tracheostomy and 2 an active seizure disorder. Clinical data was collected for 12 months prior to starting VT and during 12 months of VT. VT was initiated using standard protocols. Each individual received one 20 minute VT daily, with additional treatments every 8 hours if needed.

Results During 12 months of VT, there were no significant side effects—in particular, there were no episodes of induced emesis, fractures, or worsening seizures.

The total number of pneumonias that required antibiotics decreased from 13 prior to VT, to 7 during VT. The number of hospitalizations due to pneumonia decreased from 4 to 2.

With VT, the frequency of effective suctioning of pulmonary secretions was increased. In the individual cases, the average number of effective suctionings per month increased from 65 to 156; 56 to 87; 1 to 17; 5 to 44. With VT, the average monthly frequency of seizures decreased from 9 to 2, and from 10 to 1.

Conclusion These results indicate that VT increases the clearance of pulmonary secretions. VT also helps to prevent pneumonias, and hospitalizations from pneumonia. In two individuals with seizures, VT actually improved seizure control. There were no significant side effects from VT. Further clinical studies of VT are indicated.

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