Non-invasive ventilation (NIV) administered by respiratory physiotherapists (RPs): a national survey

S. Gambazza1, S. Zuffo2, D. Innocenti2, B. Ferrari2, 1Azienda Ospedaliero-Universitaria Meyer, Cystic Fibrosis, Firenze, Italy; 2Azienda Ospedaliero-Universitaria Meyer, Rehabilitation Unit, Firenze, Italy

Background: A physiological rationale has been demonstrated for the use of NIV in patients with cystic fibrosis (CF) however, NIV is not part of the routine management of severe lung disease in CF. RPs are often involved in the NIV usage with different skills and tasks.

Aim: To survey and evaluate the role and competences of Italian RPs involved in the NIV management for CF and the rationale as perceived by them.

Methods: A semi-structured online questionnaire consisting of 31 closed and 9 open ended questions was sent to the Italian Group of Physiotherapists belonging to the Italian Society for the Study of Cystic Fibrosis, between March and April 2010.

Results: Respondents (67%) represent 29 CF Centers out of 35, which had a total of 4064 CF patients, 96 (2.4%) of whom were using NIV. NIV is a therapeutic choice used in 62% of those centers and RPs (93%) are involved in its management. NIV is the first-line treatment to improve gas exchange (89%) and it is a valid tool as support to clearance techniques (68%) and exercise training (43%). Main criteria to propose NIV are hypercapnic pulmonary exacerbation (96%), lung transplantation waiting (96%), severe impairment of pulmonary function (89%) and difficulties experienced with clearing secretions (68%). A detailed picture revealed that 71% of RPs choose ventilators, 96% is involved in the crucial choice of interfaces and 73% is in charge of ventilator settings.

Conclusions: CF centers and clinics take advantage of NIV and RPs are involved in its management. Harmonizing the core competences of RPs and the ventilatory care of CF patients is urgently needed.

Nocturnal cough and arousals in CF patients during periods of pulmonary exacerbation: impact on sleep

C. Oppedijk1, S. Joharl1, A. Van Muylen1, C. Kuonen1, 1Erasme University Hospital, Adult Cystic Fibrosis Reference Centre, Chest Medicine, Brussels, Belgium

Background: CF patients present a chronic cough which increases during pulmonary exacerbations (PE). Several studies have assessed the consequences of daytime cough on quality of life. Only few studies have assessed nocturnal cough and its impact on sleep.

Objective: We analyzed the repercussion of nocturnal cough on quality of sleep, oxygen saturation (SaO2) and heart rate (HR) in CF patients hospitalized for PE.

Population: 16 patients (10 F) − 29 ± 8 yrs − BMI: 19.3 ± 2.5 kg/m2 − FEV1: 39.5 ± 15.8% of predicted − CRP: 4.2 ± 6.5 (mg/dL).

Methods: An audio recording was obtained during the first night at the hospital; patients wore an accelerometer (SenseWear Armband®) to assess duration of sleep, frequency of arousals and energy expenditure as well as a pulse oxymeter to follow SaO2 and HR.

Results: Patients slept for a mean of 4h54 min ±1h34min with an index of sleep effectiveness of 82%. They presented a mean of 7.7 arousals per night. The mean number of coughs observed was 90 ± 90 per minute and 15 per hour. The average energy expenditure was 461 ± 81 cal with a metabolic equivalent of 1.29 ± 0.2. The HR averaged at 69 ± 11 bpm and increased following episodes of cough to 94 ± 15 bpm (p < 0.05). We observed an average of 10 ± 12 episodes of desaturation of SaO2 < 90%, but there was no correlation in time with the cough episodes (SaO2 before-cough 93.8 ± 1.4% versus 92.5 ± 1.8% after-cough).

Conclusion: Duration and quality of sleep in CF patients during PE is moderately disrupted. We, however, observed very frequent nocturnal cough episodes and arousals. It is our belief that these observations contribute to the chronic fatigue observed in some CF patients.

Physiotherapy for cystic fibrosis in Australia: knowledge and acceptance of the Consensus Statement recommendations

B.M. Button1,2, A.E. Holland1,4, 1Alfred Hospital, Physiotherapy, Melbourne, Australia; 2East Lancashire Healthcare NHS Trust, Physiotherapy, Blackburn, United Kingdom; 3LaTrobe University, School of Physiotherapy, Melbourne, Australia

Background: ‘Physiotherapy for CF in Australia: A Consensus Statement’ was developed by the Australian Chapter of the International Physiotherapy Group for CF (IPGCF) in 2008.

Aim: To measure knowledge and acceptance of the Consensus Statement recommendations.

Method: A purpose-designed online survey using SurveyMonkey was sent to all physiotherapists treating people with CF in Australia to assess knowledge and uptake of key recommendations.

Results: Sixty-eight physiotherapists took part (response rate 49%). Knowledge of treatment recommendations was high for airway clearance (94%) and exercise assessment (76%). Most participants agreed with these recommendations (airway clearance 97% agreement, exercise 68% agreement). Only a small number of participants (18%) correctly identified the current recommendation to segregate patients with different organisms during airway clearance, with most (73%) implementing stricter infection control policies. Low levels of knowledge and agreement were evident for recommendations regarding measurement of blood sugar levels (BSLs) during exercise (36% knowledge and 28% agreement) and delivery of dornase alfa (53% and 65%). Physiotherapists from specialist CF centres were more likely to know the recommendations for BSL measurement (p = 0.014), dornase alfa (p = 0.001) and non-invasive ventilation (p = 0.07).

Conclusion: Physiotherapists are aware of treatment recommendations for CF in common areas of practice such as airway clearance and exercise. Knowledge is lower for specialised areas of practice and outside of specialist CF centres. Greater awareness and uptake of the consensus statement outside of specialist CF centres are required.

Working towards independence

E. Lloyd1, C. Hanson2, C. Tamblin3, K. Eakins3, Association of Chartered Physiotherapists in CF, North West Region. 1Liverpool Heart & Chest Hospital NHS Foundation Trust, Physiotherapy, Liverpool, United Kingdom; 2East Lancashire Healthcare NHS Trust, Physiotherapy, Blackburn, United Kingdom; 3Bridgewater Community Healthcare NHS Trust, Warrington, United Kingdom

Background: A previous study carried out by CF physiotherapists in the NW of England highlighted that some patients do not have autonomy of their care at transfer to adult services. The physiotherapists adapted an existing guide for carers and children, looking at aspects of physiotherapy in relation to chest clearance, inhaler/nebuliser use and communication. The guide was divided into age related stages, based on school transitions: preschool, infant, junior, secondary. Results concluded we need to encourage independence from an early age with all aspects of care, integrating this process into routine clinical practice as physiotherapists.

Method: Before instigating wider use of the guide, parents’ views of the guide needed to be explored. A questionnaire was developed to gather parent’s views on the usefulness and content of the guide. They were asked to explain why they found the guide useful and asked to make suggestions for change and additions they would like to see. Ethics approval was gained to send the questionnaire by post to parents.

Results: Questionnaires were returned anonymously. 28/71 (39.4%) responded. All respondents were mothers. Those who responded understood why the guide had been developed, stating the layout was easy to understand. Based on their experiences the respondents felt the guide was accurate 100% for chest clearance, 88% for nebuliser use and 88% for communication. Usefulness rating out of 5 was 4.3 (SD 0.7).

Conclusion: Parental feedback was positive, suggesting it can be used as a routine part of our clinical practice with all families starting from diagnosis; ensuring children develop independent chest management skills.