



New Alternatives in the Management of Patients Treated with Non-Invasive Mechanical Ventilation

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Editorial

Non-invasive mechanical ventilation (NIV) is considered the treatment of choice for hypercapnic respiratory failure secondary to restrictive ventilatory defects, especially in neuromuscular diseases [1]. This treatment also obtains good results in selected COPD patients, modifying the evolution of the disease and the patients' outlook on life [2,3]. The clinical indications for NIV have increased in recent years, and are well defined for the treatment of restrictive ventilatory disorders. NIV is well known to improve sleep structure and arterial blood gases and to reduce hospital admission rates resulting from acute exacerbation, thereby improving the quality of life of these [4,5]. The widespread use of NIV was already brought to light in 2005 by the multicentre study Eurovent, with a mean prevalence of 6.6 ventilated patients for every 100,000 in habitants [6]. This data turns out to be positive for the patients but, during adaptation and follow-up, they result in a greater utilisation of health resources, especially when carried out within the hospital. The increase in life expectancy and improved survival rates in patients with complex pathologies, together with the limitations on health resources, make it necessary to change the healthcare structure so that the application of the treatments is more cost-effective, whilst maintaining their quality. Both Telemonitoring [7] and Home Hospitalization [8] are forms of medical assistance that have increased dramatically and can be used when the specialized equipment is available and patients are chosen appropriately. It has been proven that Home Hospitalization is as effective or more effective than conventional hospitalization, and there is evidence that it is more cost-effective [9,10]. Furthermore, in the follow-up of complex respiratory diseases, it obtains good results and increased comfort among patients [11,12]. However the majority of the groups dedicated to NIV perform adaptation and follow-up in a standard in-hospital model, with very few groups using alternative resources. In patients with stable restrictive ventilatory defects, some studies have already shown similar results to hospitalization in the adaptation to non-invasive ventilation in outpatient clinics [13] or in the patients' own homes [14,15], whilst being more cost-effective. However, home follow-up protocols are necessary, especially in neuromuscular patients where, as well as the ventilation, the diet, and rehabilitation etc. are monitored by expert staff. The training of patient and carer in operating the respirator and its different elements, along with the quality control of the equipment used, constitute a fundamental pillar for the success of NIV, through which good results can be obtained if performed in the home environment, providing that it is adapted to the dwelling's characteristics and that the home's possible deficiencies have been clearly objectified [16,17]. Moreover, the relationship between primary care and pulmonology professionals should have validated relationship frameworks, since we know that different models of collaboration with primary care can be more cost-effective [18,19]. There are grounds for considering that if we manage to integrate pulmonology into Home Hospitalization Unit, with specialised nurses and pulmonologists, the ties with Primary Care could be strengthened, benefiting the quality of care of the ventilated patients [14]. Scientific advances permit the use of fit-for-purpose technical teams, and having a good infrastructure and expert staff result in Home Hospitalization being as effective as conventional hospitalization [20]. What is more, we believe, as do other authors, that in order to achieve a proper organisation and development of an NIV programme, the motivation, experience and dedication of the staff responsible for carrying it out are more important than the place in which it occurs [21].

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References

1. Rochweg B, Brochard L, Elliott MW, Hess D, Hill NS6, Nava S, et al. Official ERS/ATS clinical practice guidelines: noninvasive ventilation for acute respiratory failure. *Eur Respir J.* 2017;50(2):1602426.
2. Wijkstra PJ, Lacasse Y, Guyya H, Casanova C, Gay PC, Meecham Jones J, et al. A meta-analysis of nocturnal non invasive positive pressure ventilation in patients with stable COPD. *Chest.* 2003;124(1):337-43.
3. Michael I Polkey, Anita K Simonds. Homeward Bound: A Centenary of Home Mechanical Ventilation

- Matthew Hind. *AJRCCM*. 2017;195(9):1140-9.
4. Hannan LM, Dominelli GS, Chen YW, Darlene Reid W, Road J. Systematic review of non-invasive positive pressure ventilation for chronic respiratory failure. *Respir Med*. 2014;108(2):229-43.
 5. Doménech R, Nauffal D, Perpiñá M, Compte L, Macián V. Home mechanical ventilation for restrictive thoracic diseases: effects on patient quality-of-life and hospitalizations. *Respir Med*. 2003;97(12):1320-27.
 6. Lloyd-Owen SJ, Donaldson GC, Ambrosino N, Escarabill J, Feré R, Fauroux B, et al. Patterns of home mechanical ventilation use in Europe: results from the eurovent survey. *Eur Respir J*. 2005;25(6):1025-31.
 7. Chatwin M, Hawkins G, Panicchia L, Woods A, Hanak A, Lucas R, et al. Randomised crossover trial of telemonitoring in chronic respiratory patients (TeleCRAFT trial). *Thorax*. 2016;71(4):1-7.
 8. Georgia I Narsavage, Chair Kathryn Anderson, Jacquelyn McClure, Joseph Lewarski, William Prentice, Paul a Selecky, et al. Statement on Home Care for Patients with Respiratory Disorders. *Am J Respir Crit Care Med*. 2005;171(12):1443-64.
 9. Caplan GA, Sulaiman NS, Mangin DA, Aimonino Ricauda N, Wilson AD, Barclay L. A meta-analysis of "hospital in the home". *Med J Aust*. 2012;197(9):512-9.
 10. Conley J, O'Brien CW, Leff BA, Bolen S, Zulman D. Alternative Strategies to Inpatient Hospitalization for Acute Medical Conditions: A Systematic Review. *JAMA Intern Med*. 2016;176(11):1693-1702.
 11. Jeppesen E, Brurberg KG, Vist GE, Wedzicha JA, Wright JJ, Greenstone M, et al. Hospital at home for acute exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2012;16(5):CD003573.
 12. Griffiths C, Foster G, Barnes N, Eldridge S, Tate H, Begum S, et al. Specialist nurse intervention to reduce unscheduled asthma care in a deprived multiethnic area: the east London randomised controlled trial for high risk asthma (Electra). *BMJ*. 2004;328(7432):144-9.
 13. Lujan M, Moreno A, Veigas C, Martin A, Pomares X, Domingo C. Non invasive home mechanical ventilation: effectiveness and efficiency of an outpatient initiation protocol compared with the standard in-hospital model. *Respir Med*. 2007;101(6):1177-82.
 14. Doménech-Clar R, Nauffal-Manssur D, Compte-Torrero L, Rosales-Almazán MD, Martínez-Pérez E, Soriano-Melchor E. Adaptation and follow-up to noninvasive home mechanical ventilation: Ambulatory versus hospital. *Respiratory Medicine*. 2008;102(11):1521-7.
 15. Hazenberg A, Kerstjens HA, Prins SC, Vermeulen KM, Wijkstra PJ. Initiation of home mechanical ventilation at home: A randomised controlled trial off efficacy, feasibility and costs. *Respir Med*. 2014;108(9):1387-95.
 16. Birnkrant DJ, Bushby KM, Amin RS, Bach JR, Benditt JO, Eagle M, et al. The Respiratory Management of Patients with Duchenne Muscular Dystrophy: A DMD Care Considerations Working Group Specialty Article. *Pediatr Pulmonol*. 2010;45(8):739-48.
 17. Farre R, Lloyd-Owen SJ, Ambrosino N, Donaldson G, Escarrabill J, Fauroux B, et al. Quality control of equipment in home mechanical ventilation: a European survey. *Eur Respir J*. 2005;26(1):86-94.
 18. Plaza Moral V. Médico de familia y neumólogo ¿coordinación o confrontación? Propuesta de un esquema entre atención primaria y neumología. *Arch Bronconeumol*. 2004;40(supl 3):15-7.
 19. Seemungal TA, Wedzicha JA. Integrated care: a new model for COPD management? *Eur Respir J*. 2006;28(1):4-6.
 20. Coulter A, Entwistle VA, Eccles A, Ryan S, Shepperd S, Perera R. Personalised care planning for adults with chronic or long-term health conditions. *Cochrane Database Syst Rev*. 2015;(3):CD010523.
 21. Diaz Lobato S, Mayorales Alises S. Reflexiones para la organización y desarrollo de una unidad de ventilación mecánica no invasiva y domiciliaria. *Arch Bronconeumol*. 2005;41(10):579-83.