

The rise of non-invasive mechanical ventilation in the 21st century

El auge de la ventilación mecánica no invasiva en el siglo XXI

Gilberto Lázaro Betancourt Reyes^{1*} <https://orcid.org/0000-0001-8778-3834>

¹Hospital Universitario “Amalia Simoni Argilagos”. Unidad de Cuidados Intensivos (UCI). Camagüey, Cuba.

*Autor para la correspondencia: enrich@nauta.cu

Recibido: 15/04/2019

Aprobado: 18/04/2019

In the XXI century, the incredible gigantic scientific-technological progress all around the world, and specially in the medical sciences, it has characterized an astonishing possibility to increase the quality of the whole medical attention, so we can improve manners of life support. The technological development is occasionally not well applied to the sick people who need that equipment, that in the last decade human mankind has been emerging. So it will be important to underline the increasing use of the noninvasive mechanical ventilation (NIMV) as a procedure of vital support for the maintenance of a vital function, such as breathing.

Noninvasive mechanical ventilation (NIMV) is a vital support measure,⁽¹⁾ it represents a variety of ventilatory support that allows to increase alveolar ventilation, keeping intact the airways, not requiring endotracheal intubation or tracheotomy, so avoiding several complications such as invasive mechanical ventilation.⁽²⁾

It is understood as a vital support treatment (VST): all medical intervention, technique, procedure or medication that it is administered to a patient to retard the moment of the death, be or not this treatment directed toward the base illness or the causal biological process.⁽³⁾

In recent years, patients that are not applicants to invasive mechanical ventilation, NIMV has become more and more powerful as an initial approach to acute respiratory failure in a diversity of diseases. This progressive increase in its use stems from its ability to avoid the serious complications that are so often seen in the daily routine of the intensivist and which are derived from traditional mechanical ventilation; all this interferes in a negative way in the weaning process of the ventilator patient and therefore their short, medium and long term prognosis is usually compromised.⁽⁴⁾

Another of the benefits is the NIMV at home, which is increasingly being considered in elderly patients and in patients with non-intubation order or associated severe comorbidity, as well as for palliative purposes.⁽⁵⁾

The benefits derived from this therapeutic measure reflect clearly, such as individually, with a decrease in symptoms, a better quality of life and an increase in their life expectancy, as well as collective, with a decrease in health costs, since these patients require a smaller number of admissions to health institutions. The main objectives to be achieved with this modality of home ventilation are the lengthening of the patient's life; to try to improve the quality of life; the provision of an environment that can favor individual, family and work development of the patient; thus reducing morbidity, improving physical and psychic function, not focusing only in the diagnosis but in the prognosis.

The author considers that according to the enormous dilemmas at the present time related to the scientific-technological development, it is irrefutable that the employment of the noninvasive mechanical ventilation is one of most valuable vital support treatment in the Intensive Care Unit (ICU) due to the risk of death at any time.

Bibliographic references

1. Rodríguez Pérez I, Navarro Rodríguez Z, Romero García L. Evolución de los pacientes con insuficiencia respiratoria aguda tratados con ventilación no invasiva. Rev Cub Med Int Emerg. 2017 [citado: 03/04/2019];16(3):41-8. Disponible en: http://www.revmie.sld.cu/index.php/mie/article/view/41-48/html_113
2. Oviedo PAA, Cruz AB, Rodríguez AR, Falcón LR. Impacto de la ventilación no invasiva en la unidad de cuidados intensivos. Rev Cub Med Int Emerg. 2016 [citado:

- 03/04/2019];16(1). Disponible en:
<http://www.revmie.sld.cu/index.php/mie/article/view/190>
3. Rincón Roncancio M, Garzón Díaz F. Problemas éticos del retiro o limitación de tratamiento vital en unidades de cuidados intensivos. Revista Latinoamericana de Bioética. 2015 [citado: 03/04/2019];15(2):42-51. Disponible en:
<https://www.redalyc.org/pdf/1270/127040727004.pdf>
4. Torres Maceo JM, Ortiz Zamora C, Avarro Rodriguez Z. Noninvasive mechanical ventilation in patients with acute chronic obstructive pulmonary disease. MEDISAN. 2015 [citado: 03/04/2019];19(10):1224-31. Disponible en:
<http://www.medisan.sld.cu/index.php/san/article/view/473>
5. Betancourt Reyes GL. Non-invasive mechanical ventilation at home. Cuban Emergency and Critical Care Medicine Journal. 2017 [citado: 03/04/2019];16(3):15-21. Disponible en: http://www.revmie.sld.cu/index.php/mie/article/view/15-21/pdf_50

Conflict of interests

The author declares there is no conflict of interests.