

of age, with elective indication in 61%. Elective ventilation was started at hospital setting in 42 patients and outpatient setting in 15 patients since 2012. Patients under domiciliary ventilation also were provided with respiratory therapeutic equipment at home: in-exsufflator, oximeter, respiratory secretions suction device, oxygen therapy, nebulizer and glossopharyngeal breathing. During follow-up (3.1 ± 2.8 years, maximum 12.5 years), 55.9% had no hospitalizations and 41.9% had less than two hospital stays/year. No major complications related with ventilation requiring its withdraw were described.

The exponential ventilation use in paediatric chronic patients in our IDVC follows the international trend during the last decade in developed countries,^{1,2} mainly by an increase of NIV. We report a higher percentage of patients under domiciliary NIV than most centers. Noninvasive ventilation advantages include lower infection risk, more independence and less vocal commitment.³

There was a reduced need of hospital admission for ventilation adaptation, which can be related to a better use of resources available in the hospital and community and the efficient home monitoring provided by the IDVC program. Ambulatory ventilation adaptation benefits have not been studied in children, but studies in adults have proven similar clinical efficacy while reducing the economic costs by 50–70%.^{4,5}

In most of our cases there was a low number of hospital admissions (0.5 hospital admission/patient/year) in spite of patients' disease complexity, as has been reported in other centres with paediatric multidisciplinary ventilation clinics (0.17–1.6 hospital admissions/patient/year in different demographic and clinic groups of paediatric patients).^{6,7}

Close cooperation between patient, his family and a specialized group of health care professionals can improve clinical outcomes. Domiciliary care and monitoring in continuum with hospital multidisciplinary assessments might improve respiratory care for chronic paediatric patients needing domiciliary ventilation. Outpatient clinic models, like the IDVC described, can be integration tools between home and hospital care.

Conflicts of interest

The authors have no conflicts of interest to declare.

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Critical appraisal of the Portuguese clinical guideline 28/2011



“It is not recommended the regular prescription of mucolytics nor antitussive agents.”

(DGS Guideline 28/2011 - COPD, p. 5).

This sentence addresses two very different therapeutic categories. We agree only with the antitussive agents part.

According to the 2015 update of GOLD guidelines,¹ which address chronic obstructive pulmonary disease

(COPD), the use of mucolytics, such as N-acetylcysteine or carbocysteine, can have a positive effect on the reduction of the number of exacerbations. The most recent Cochrane² review on the issue included many non-identical studies (a very high heterogeneity index, $I^2 = 87\%$), which makes it particularly difficult to identify statistically significant difference between groups. Despite this fact, the benefit reported from the use of mucolytics was significant as far as exacerbation reduction was concerned (OR 1.84; CI_{95%} 1.63–2.07), which can also be translated into a number needing to be treated of 7 (one should treat 7 patients for at least 10 months in order

to achieve a reduction of 1 exacerbation episode), as well as on the statistically significant lowering of the number of sick days (on average, a decrease of 0.48 days, CI_{95%} -0.65 to -0.30).

Following what has been said, we think that the sentence *“It is not recommended the regular prescription of mucolytics nor antitussive agents.”* does not reflect the real potential benefit underlying the mucolytic drugs in COPD patients, which has the additional advantage of low risk of adverse events.

Therefore, we propose that the phrase quoted be replaced by sentences such as the two that follows:

- 1) *“The real impact of a regular prescription of mucolytic agents is still not thoroughly understood. It should be emphasized that among COPD patients of moderate or high severity, the regular use of mucolytics (such as N-acetylcysteine or carbocystein) can have a beneficial effect on the decrease of the number of exacerbation episodes,^{*} as well as on the reduction of the number of sick leave days.[†]”*

- 2) *“We do not recommend the regular prescription of anti-tussive agents, as they have the potential for inhibiting the protective airway cough reflex.”*

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* OR = 1.84 (CI_{95%} 1.63–2.07); NNT = 7 (CI_{95%} 6–9), in order to avoid one episode of exacerbation, during 10 months of continuous treatment.

† *“Average reduction of the number of sick leave days: -0.48 (CI_{95%} -0.65 to -0.30).”*