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## Conflict of interest

The authors declare that they have no conflicts of interest to the contents of the manuscript.

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## Ethical limits for noninvasive ventilation prescription



## Limites éticos para a prescrição de ventilação não invasiva

To the Editor:

Non-Invasive Ventilation (NIV) is the treatment of choice in acute respiratory failure (ARF) related to Chronic Obstructive Pulmonary Disease exacerbation and Acute Cardiogenic Pulmonary Edema.<sup>1,2</sup> It has also demonstrated good results in a set of other consensual and systematized pathologies.<sup>1,2</sup> In addition NIV has been used as an alternative for ARF patients who have “do-not-intubate” orders either due to poor prognosis associated with multiple comorbidities or terminal disease, or as palliative management of dyspnea.<sup>2</sup>

Aiming to encourage discussion around this theme, the authors reviewed 508 medical records of patients undergoing NIV between November 2011 and May 2013, in *Hospital Geral do Centro Hospitalar e Universitário de Coimbra*, and identified 15 cases in which the use of NIV was the subject of ethical considerations: 6 patients with advanced cancer disease, 5 with multiple organ dysfunction, 3 with extensive stroke damage, and one patient with respiratory failure (RF)

of central origin. The patients, 4 male and 11 females, had an average age of  $65 \pm 15$ , and had an average age-adjusted Charlson comorbidity index of  $6.5 \pm 3.1$ . Five patients presented type 1 RF, and 9 had type 2 RF. NIV was administered to one patient despite a lack of RF criteria. The average  $\text{PaO}_2/\text{FiO}_2$  ratio was  $187.9 \pm 60.2$ , and average  $\text{PaCO}_2$  was  $58.3 \pm 25.0$  mmHg. Seven patients presented acidosis (average pH:  $7.19 \pm 0.13$ ): mixed in 4 cases, respiratory in 2, and metabolic in one patient. The application of pressure support ventilation of  $11.4 \pm 2.8$  cmH<sub>2</sub>O, with  $50.4 \pm 21.7\%$   $\text{FiO}_2$  led to improved pH,  $\text{PaO}_2/\text{FiO}_2$  and  $\text{PaCO}_2$  but showed no statistical significance (Table 1). After  $3.0 \pm 4.2$  days of NIV 13 of the 15 patients died. None of the 10 patients capable of assessing the efficacy subjectively referred relief of dyspnea.

In conclusion, we do not consider it appropriate to use NIV in situations where there is no legitimate justification. On the contrary: it is an inefficient and costly approach and often leads to misperceptions about end of life management.<sup>3</sup> With our limited public health resources providing differentiated treatments to those who do not benefit from them could be considered ethically reprehensible because, as a consequence, treatment may not then be available for those who would benefit. NIV can on occasions contribute to a patient's comfort, when combined with other measures (like administration of morphine) in the appropriate institutions, but not in hospital emergency room.

Table 1 Arterial Blood Gas (ABG) parameters evolution.

Parameters	Baseline	After NIV trial	P value
pH	$7.31 \pm 0.18$	$7.36 \pm 0.11$	0.600
$\text{PaCO}_2$ (mmHg)	$58.3 \pm 25.0$	$51.9 \pm 12.7$	0.507
$\text{PaO}_2/\text{FiO}_2$	$187.9 \pm 60.2$	$192.25 \pm 67.2$	0.882
NIV, non-invasive ventilation.			

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## Towards a 100% smoke-free Portugal: No more delays



### Para um Portugal 100% livre de tabaco: Sem mais demoras

We read with the greatest of interest the study by Paradela et al., 2013 assessing self-reported exposure (e) to second-hand smoke (SHS) in private/public enclosed settings.<sup>1</sup> Although only a regional survey, it is one of the few that has assessed post-ban perception about the change in SHSe. The main findings are:

- Exposure to SHS is high, significantly higher in public leisure settings where vulnerable populations such as young people should be protected by law.
- Young adults are highly exposed.
- Perceived exposure in the home and workplaces is similar to the pre-ban period.<sup>1</sup>

In 2013, a similar survey conducted in Covilhã observed the same trends. Furthermore, several studies have reported: (1) high SHSe in restaurants/casinos/bars/discos/mental health services; (2) patchy compliance with the ban, specially in settings which allow exemptions; (3) poor ban enforcement<sup>2</sup> (non-published research: Calheiros et al., 2010; Ravara et al., 2012; Reis et al., 2011). Moreover, Portuguese children's exposure to SHS is high<sup>3</sup>; one of the highest in the EU (non-published research: Reis et al., Democophes 2012), several studies have reported low motivation to quit, few attempts at giving up, and an increasing prevalence among youth and females.<sup>4</sup> These indicators mirror the failure of tobacco control policies enacted by successive governments/legislators. At the moment, the Portuguese government is about to revise the smoke-free policy (SFP). The government has publicly announced its intention to pass a 100% SFP. However, an 8 years moratorium has been proposed for hospitality venues, allowing smoking and ventilation systems, in order to "compensate for the investment made".

While governments and legislators are elected to promote the health and well-being of all Portuguese citizens, they have mostly protected tobacco industry and other "vested interests". The consequence of this is a major

toll of death, disability, and suffering and it promotes health and social inequalities and threatens the country economy and welfare.<sup>5</sup> WHO clearly emphasises that only 100% SFPs protect against SHSe<sup>5</sup> and stresses that exemptions, such as the moratorium presented by the current Portuguese government, are common tactics of the tobacco industry to block SFP implementation.<sup>5</sup> Moreover, an eminent Portuguese constitutionalist has stated that SFP exemptions are unconstitutional: while failing to protect all citizens, they violate the general principle of health protection of Portuguese law.<sup>2</sup> The Portuguese public health community should publicly denounce the interference of the tobacco industry in policy-making, accordingly to article 5.3 of WHO-FCTC treaty<sup>5</sup>; and demand a 100% smoke-free Portugal without any exemptions or delays; as part of a comprehensive, adequately funded and enforced tobacco control programme.<sup>4,5</sup> This would comply with the Portuguese government's obligation following the WHO-FCTC ratification in 2005.<sup>5</sup>

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