Screening for sleep-disordered breathing is recommended in patients with chronic heart failure

To the Editors:

In a recent editorial in the *European Respiratory Journal*, K.A. Franklin criticised the screening of heart failure patients for sleep-disordered breathing (SDB) [1]. The major concern was that, to date, no beneficial effect on overall prognosis has been shown for any therapeutic option, *e.g.* nocturnal oxygen, continuous positive airway pressure (CPAP) or adaptive servoventilation (ASV).

The Canadian Continuous Positive Airway Pressure for Patients with Central Sleep Apnea and Heart Failure (CANPAP) trial was the first study to assess the effect of CPAP therapy in patients with chronic heart failure (CHF) and predominantly central sleep apnoea (CSA) on mortality [2]. Unfortunately, this study failed to demonstrate a prognostic benefit. However, there is ongoing debate as to how to interpret the CANPAP trial results, but there might be a consensus that CPAP cannot be recommended for all CHF patients with CSA as performed in this trial. There is no question that more evidence is needed as to how to treat SDB in patients with CHF. Several small studies have shown beneficial effects of oxygen, CPAP or ASV on parameters of SDB and/or CHF, but studies on mortality are pending. It seems likely that therapeutic approaches should be tailored to different types and severities of SDB (obstructive, central or mixed), and results may be dependent upon SDB and CHF severity.

Recently published studies have confirmed a high prevalence of SDB in patients with CHF treated according to current guidelines [3, 4]. In addition, central types of SDB (periodic breathing or Cheyne–Stokes respiration) are supposed to be indicators of the severity of cardiac failure in selected patients. With worsening CHF, the number of central events increases, and sufficient heart failure therapy can improve CSA substantially [5, 6]. Moreover, it has been shown that the presence of obstructive [7], as well as central [8, 9], types of SDB are associated with an impaired prognosis and increased morbidity in these patients. In this context, the apnoea/hypopnoea index represents a strong prognostic marker of future cardiac events [10]. This implies that screening for SDB is warranted in order to identify at-risk patients and lead to intensified therapeutic efforts. Consequently, screening for SDB should be part of the routine work-up in CHF patients (such as, for example, spiroergometry) for the identification of at-risk patients and perhaps intensification of therapy.

With the availability of simplified and portable screening devices, we recommend screening for sleep-disordered breathing in every heart failure patient, and even use these devices for follow-up purposes. Diagnostic nihilism seems to be inappropriate, but studies on treatment modalities need to be performed.

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STATEMENT OF INTEREST

Statements of interest for all authors of this manuscript can be found at www.erj.ersjournals.com/misc/statements.shtml

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From the author:

I am grateful for the interest and the comments by O. Oldenburg and co-workers regarding my editorial [1].

There is no question that treatment of sleep apnoea among patients with congestive heart failure is of great interest, because sleep apnoea is common among such patients, especially in the form of central apnoea and Cheyne–Stokes

respiration [2]. My major concern relates to large-scale screening programmes for sleep apnoea in patients with heart failure before solid evidence of treatment effect on central sleep apnoea regarding patient-related outcomes is obtained, *i.e.* survival, symptoms or quality of life.

O. Oldenburg and co-workers argue that the apnoea/hypopnoea index could be used as a surrogate end-point, since a diagnosis of central sleep apnoea is associated with an impaired prognosis [3–5]. Oxygen, continuous positive airway pressure and ventilators all reduce the frequency of central apnoeas, *i.e.* the central apnoea/hypopnoea index. However, other authors have not observed any increased mortality among patients with central sleep apnoea [6, 7]. Surrogate end-points also infer a risk of false interpretation. One such example was anti-arrhythmic treatment studies on patients suffering acute myocardial infarction with arrhythmia as the outcome. Reduction of the number of ventricular arrhythmia was later shown to be associated with an increased mortality rate [8].

I am certainly in agreement with O. Oldenburg and co-workers that we need high-quality treatment studies in patients with congestive heart failure and sleep apnoea. My concern is that we should wait for the results of these studies before starting large-scale screening programmes.

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STATEMENT OF INTEREST

None declared.

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Is 13 g·dL^{-1} the threshold to correct anaemia in COPD?

To the Editors:

I read with interest the recent article by COTE *et al*. [1], wherein the authors have beautifully highlighted the prevalence and association of abnormal haemoglobin with clinical outcomes in a cohort of stable chronic obstructive pulmonary disease (COPD) outpatients. However, there are certain points regarding their study that need discussion.

First, there may be overestimation of the anaemia prevalence, as patients with cancer, thyroid disease, liver disease, gastrointestinal haemorrhage or blood loss and vitamin B12 or folic acid deficiency were not excluded in the study and the prevalence of these diseases increases with age.

Secondly, the type and severity of anaemia was not categorised in the study. It was presumed that all the patients had anaemia of chronic diseases, and a wide range of other causes of anaemia in elderly people could have been missed.

Thirdly, the clinical symptoms of anaemia vary with the degree of severity of anaemia and, in the study, there was no correlation between severity of anaemia and increased dyspnoea and reduced exercise capacity.

Fourthly, it is important to note that anaemia of chronic disease (as in COPD) can be a reflection of a more progressive underlying disease [2, 3]. However, the study by COTE *et al*. [1] could not associate this.

Finally, treatment of the underlying disease is the therapeutic approach of choice for anaemia of chronic diseases [2] and, in cases where the treatment of the underlying disease is not feasible, alternative strategies are necessary. Blood-transfusion therapy has been associated with increased survival rates in anaemic patients with myocardial infarction [4], but transfusion itself has also been associated with multiorgan failure and increased mortality in critically ill patients [5]. Erythropoietic agents are approved for use in patients with anaemia of chronic disease as their beneficial effect involves counteracting the antiproliferative effects of cytokines [3], along with the stimulation of iron uptake and heme biosynthesis in erythroid progenitor cells [2].