

# Sporadic and epidemic community legionellosis: two faces of the same illness

To the Editors:

We read with interest the article of SOPENA *et al.* [1] on the comparisons of risk factors, presentation and outcome of community-acquired *Legionella pneumophila* pneumonia in 138 sporadic-case patients (1994–2004) and 113 outbreak-case patients (2002). As suggested by the authors, a limitation of comparison on the clinical severity between the two populations could be related to the delay in diagnosis. In other words, in the case of an outbreak, many exposed patients were screened for legionellosis using urinary antigen assays so that patients with mild symptoms could be diagnosed and treated. Conversely, sporadic cases were more frequently diagnosed, such as when the patients were hospitalised due to the severity of their symptoms. This corresponds to a more typical presentation and detection of the disease. A means to test this hypothesis would be to calculate the delay between the onset of the disease and the time of *Legionella* urinary antigen detection within the two groups of patients, and then compare the severity of the symptoms adjusted with these delays. It would be reasonable to suppose that for a similar delay in diagnosis, the clinical features would be the same for sporadic and outbreak cases. If differences persisted after adjustment for delays in diagnosis, then specific determinants would need to be identified in relation to the severity of the legionellosis within these two populations.

Similarly, as demonstrated in some studies performed among patients with cancer [2], this investigation would face a bias due to the earlier time of diagnosis associated with a screening procedure called “lead-time” and would possibly lead to over-diagnosis.

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## STATEMENT OF INTEREST

None declared.

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# Benefits of a modified spirometry technique

To the Editors:

We applaud the American Thoracic Society (ATS) and the European Respiratory Society for their continuing efforts to optimise pulmonary function testing practice through disseminating guidelines, such as the recent spirometry guidelines [1]. In reviewing this document, we wish to point out a spirometry practice that, although mentioned (but not endorsed) in the guidelines, can, in our experience, substantially improve and streamline the performance of spirometry by pulmonary function laboratories [2]. Specifically, we point out the benefits of a modified spirometry technique in which the expiratory effort is relaxed after the first 3 s of expiration. As evaluated and reported in a small, randomised, controlled, crossover trial of two expiratory techniques and in our subsequent experience [2], four lines of reasoning support the benefits of using this modified spirometry technique to obtain high-quality measurements, as follows.

1) Enhanced satisfaction of spirometric end-of-test criteria. In the original report [1], ATS end-of-test criteria were met significantly more frequently with the modified expiratory

technique (58.3 *versus* 18.7% of sessions;  $p < 0.001$ ). More recent experience in our laboratory, in which we have routinely used this technique since 1994 [3], confirms this initial experience, leading us to recommend this technique to others and for consideration to include in future guidelines. For example, using this technique in recent years, the mean expiratory time for patients with obstruction in our laboratory is  $12.4 \pm 3$  s.

2) Patient preference for this modified technique. In our initial comparison of techniques and subsequent experience, patients tested with both techniques preferred the modified technique. In our original report, although comparative subjective ratings did not achieve statistical significance, trends toward more comfort and less lightheadedness with the modified technique were evident.

3) Fewer adverse effects associated with spirometry performance using the modified technique. The frequency of presyncope and syncope, although low even with the standard technique of sustained forced expiration, seems yet lower using the modified expiratory technique. Before 1994, when

the standard "push as hard as you can for as long as you can" expiratory technique was used, we observed an annual mean of ~13 episodes of pre-syncope or syncope during spirometry. Since adopting the modified technique as our standard approach in 1994, we have observed no episodes of pre-syncope or syncope during spirometry in the context of performing >15,000 testing sessions yearly in our laboratory.

4) Streamlined spirometry technique. Our experience suggests that the difference between forced vital capacity (FVC) and slow vital capacity (SVC) most often relates to the patient's inability to sustain a forced expiration rather than true physiological air-trapping. A review of our laboratory database shows the mean difference between SVC and FVC from the same testing session in patients with airflow obstruction is 0.13 L, with 23% of patients showing a slightly higher FVC than SVC. As introduction of this modified technique has lessened the difference between FVC and SVC, we no longer routinely perform the SVC manoeuvre during spirometry and measure SVC only when determining lung volumes, thereby shortening the standard spirometry procedure considerably. On this basis as well, we recommend the modified expiratory technique to others.

Overall, in the context of our favourable experience with this modified expiratory technique in our initial report and over the subsequent 14 yrs, we recommend it to others and favour consideration of its endorsement in forthcoming official recommendations and guidelines as a useful strategy along with others (e.g. measuring the forced expiratory volume in six seconds [4]) to optimise spirometry measurements.

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#### STATEMENT OF INTEREST

None declared.

#### REFERENCES

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- 2 Stoller JK, Basheda S, Laskowski D, Goormastic M, McCarthy K. Trial of standard *versus* modified expiration to achieve end-of-test spirometry criteria *Am Rev Respir Dis* 1993; 148: 275–280.
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*From the authors:*

In their letter, J.K. Stoller and K. McCarthy support a modified technique of forced expiration, which they proposed facilitates

the achievement of acceptability criteria for spirometry practice [1]. They rightly point out that their method of reducing effort part-way through the expiratory manoeuvre has been quoted but not endorsed in the recent American Thoracic Society (ATS)/European Respiratory Society (ERS) document on standardisation of spirometry [2]. We may understand the authors' disappointment for not seeing their method endorsed, but we think this is justified for the following reasons. As J.K. Stoller and K. McCarthy acknowledge in their letter, their method was originally proposed in a small study [1]. Moreover, the additional information they are now providing on their subsequent experience was, and still is, unavailable in the literature on which the ATS/ERS recommendations were based. Conversely, the only published paper quoted by J.K. Stoller and K. McCarthy [3] in support of their modified expiratory technique does not actually present relevant data, but just includes in the discussion a speculation about its possible advantages in terms of achievement of end-of-test criteria.

With regard to the difference between forced vital capacity (FVC) and slow expiratory vital capacity (SVC), it should be pointed out that, as initially reported in 1994 by the ATS [4], the latter may provide a more accurate determination of the true vital capacity than the former. Moreover, FVC may be largely different from SVC or inspiratory vital capacity in subjects with airway obstruction [5] and even in elderly normal subjects [6]. Under physiological conditions, ageing is associated with loss of elastic recoil and muscle fatigue during forced expirations, which may cause incomplete emptying of lung. Thus, we think it is not worthwhile to lose information that can only be derived from the correct performance of well-standardised manoeuvres.

Having said that, we do not think the method proposed by J.K. Stoller and K. McCarthy is to be neglected, but further evidence should be provided before it can be recommended in future guidelines.

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#### STATEMENT OF INTEREST

None declared.

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