

## Reply to the Letter to the Editor

### Reply to Apostolakis et al.

Beatrix Hoksch<sup>\*</sup>, Ralph Alexander Schmid  
 Division of General Thoracic Surgery,  
 University Hospital Berne, Switzerland

Received 20 October 2008; accepted 21 October 2008

**Keywords:** Procalcitonin; Pleural empyema; Decortication

We would like to thank Dr Apostolakis for his valuable comment on our recently published results on procalcitonin (PCT) in the postoperative course after decortication in case of pleural empyema [1,2].

The point of the study was the observation of the postoperative course of PCT in comparison to CrP. We registered that PCT seems 'to reflect the postoperative clinical course more accurately than CrP' and has had 'a good correlation with the postoperative course in case of SIRS or sepsis' [2]. On the other hand low preoperative levels of PCT, as was the case in two patients (9.1%), do not exclude a localized (without systemic signs) infection. The patient with the postoperative recurrent pleural effusions showed a preoperative level of 0.35 ng/ml. This is not a low level but rather a sign of an infection, yet not necessarily a systemic one (serum or plasma PCT concentrations of healthy persons are measured with the Kryptor-assay are below 0.06 ng/ml [3]).

If there was only the sneaking suspicion that a pleural empyema was due to tuberculosis (clinic, anamnesis) this patient was excluded from the trial from the beginning of treatment. So not one of the patients in the presented study had tuberculosis.

We are sure that in case of an earlier availability of the PCT values most of the patients with an antibiotic treatment after discharge would not have received antibiotics (up to 85.7%). 'So the use of PCT instead of CrP in the postoperative course after decortication could save at least 7 days of antibiotic treatment' [2]. This is in accordance with other trials [4,5].

Indeed, the number of patients is small, in this prospective, but not randomized trial. And it is known that PCT levels show a wide variation but: 'In general dynamics of PCT levels, rather than the absolute values, may be more important for identifying patients with persistent infection or infectious complications after surgery' [2].

Therefore we also think it is very important to have randomized studies with more patients, maybe in a multi-center trial. These studies should determine the value of PCT as a promising marker in thoracic surgery not only after decortication in case of pleural empyema.

## References

- [1] Apostolakis E, Prokakis C, Dougenid D. Are procalcitonin levels sufficient for the follow up of patients undergoing lung decortications for pleural empyema? *Eur J Cardiothorac Surg* 2009;35:194.
- [2] Carboni G, Fahrner R, Gazdhar A, Printzen G, Schmid RA, Hoksch B. Comparison of procalcitonin and CrP in the postoperative course after lung decortications. *Eur J Cardiothorac Surg* 2008;33(5):777–80.

- [3] Morgenthaler NG, Struck J, Fischer-Schulz C, Seidel-Mueller E, Beier W, Bergmann A. Detection of procalcitonin (PCT) in healthy controls and patients with local infection by a sensitive ILMA. *Clin Lab* 2002;48(5–6):263–70.
- [4] Hochreiter M, Köhler T, Schweiger AM, Keck FS, Bein B, von Spiegel T, Schröder S. Antibiotic treatment of surgical intensive care patients: procalcitonin to guide duration of therapy. *Anaesthesist* 2008;57(6):571–7.
- [5] Stolz D, Crist-Crain M, Bingisser R, Leuppi J, Miedinger D, Mueller C, Huber P, Mueller B, Tamm M. Antibiotic treatment of exacerbations of COPD: a randomized, controlled trial comparing procalcitonin-guidance with standard therapy. *Chest* 2007;131(1):9–19.

<sup>\*</sup>Corresponding author. Address: Division of General Thoracic Surgery, University Hospital Berne/Inselspital, 3010 Berne, Switzerland.  
 Tel.: +41 31 632 2111.

E-mail address: [beatrix.hoksch@insel.ch](mailto:beatrix.hoksch@insel.ch) (B. Hoksch).

doi:10.1016/j.ejcts.2008.10.024

## Letter to the Editor

### Anterior leaflet augmentation to address tethering-induced functional tricuspid regurgitation

Patrick O. Myers<sup>\*</sup>, Aristotelis Panos,  
 Mustafa Cikirikcioglu, Afksendiyos Kalangos  
 Division of Cardiovascular Surgery,  
 Geneva University Hospitals, Geneva, Switzerland

Received 23 September 2008; accepted 24 October 2008

**Keywords:** Tricuspid valve repair; Annuloplasty; Tethering; Functional tricuspid regurgitation

We read with great interest the article by Dreyfus et al. on tricuspid leaflet augmentation in functional tricuspid regurgitation [1]. We congratulate the authors for their innovative approach to relieve tethering-induced functional tricuspid regurgitation and their excellent results. As mentioned by the authors, inadequate tricuspid leaflet coaptation has been shown to arise from annulus dilatation greater than 40 mm and tethering of the valve leaflets in functional tricuspid regurgitation. Annuloplasty addresses annular dilatation, however it has not been shown to improve leaflet tethering. Several authors have proposed valve repair techniques to address severe tethering, such as a tricuspid version of the Alfieri repair or 'clover' technique [2] or right ventricular remodeling [3]. The method described by Dreyfus et al. is innovative, in that it is the first to increase leaflet mobility and coaptation in the dilated right ventricle. However, paraphrasing the author's own remarks on functional mitral regurgitation repair at the 22nd EACTS meeting, this remains a valvular approach to a ventricular problem. Furthermore, Park et al. recently showed in a real-time 3D echocardiographic study of 54 patients with functional tricuspid regurgitation [4] that tethering was predominantly due to the septal leaflet, and not the anterior leaflet. These results are counter-intuitive,