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Introducing ?Medical Writing Tips of the Month?

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All three groups experienced similar complications and rates of improvement of symptoms, with no procedure demonstrating superiority. Performing a sham endoscopy procedure in an ELVRS study might be the most effective manner to create a meaningful control group. Second, an analysis of subsets in this study to identify the ideal technique or candidates for ELVRS seems premature.

Despite all of its promise, and all of our enthusiasm, we are not yet certain if ELVRS is truly effective. Indeed, a multicenter, randomized, controlled trial of another endobronchial valve for ELVRS is currently underway. Let us await the results of this trial before further efforts are made to identify the ideal candidate, device, or technique for ELVRS.

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References

1 Mannino DM. Epidemiology and global impact of chronic obstructive pulmonary disease. Semin Respir Crit Care Med 2005; 26:204–210
2 Burney P. Pharmacoepidemiology of COPD. Eur Respir J Suppl 2003: 22:1s–44s
3 Ramsey SD, Sullivan SD. Evidence, economics, and emphysema: Medicare's long journey with lung volume reduction surgery. Health Aff (Millwood) 2005; 24:55–66
4 Mannino DM. Chronic obstructive pulmonary disease: definition and epidemiology. Respir Care 2003; 48:1185–1191
5 Brantigan O, Mueller E. Surgical treatment of pulmonary emphysema. Am Surg 1957; 23:789–804
6 Cooper JD, Patterson GA. Lung-volume reduction surgery for severe emphysema. Chest Surg Clin N Am 1995; 5:815–831
7 Fishman A, Martinez F, Naunheim K, et al. A randomized trial comparing lung-volume-reduction surgery with medical therapy for severe emphysema. N Engl J Med 2003; 348:2059–2073
8 Ramsey SD, Berry K, Etzioni R, et al. Cost effectiveness of lung-volume-reduction surgery for patients with severe emphysema. N Engl J Med 2003; 348:2092–2102
9 Yim AP, Hwong TM, Lee TW, et al. Early results of endoscopic lung volume reduction for emphysema. J Thorac Cardiovasc Surg 2004; 127:1564–1573
10 Hopkinson NS, Toma TP, Hansell DM, et al. Effect of bronchoscopic lung volume reduction on dynamic hyperinflation and exercise in emphysema. Am J Respir Crit Care Med 2005; 171:453–460
11 Wan IYP, Toma TP, Geddes DM, et al. Bronchoscopic lung volume reduction for end-stage emphysema: report on the first 98 patients. Chest 2006; 129:518–526
12 Moseley JB, O'Malley K, Petersen NJ, et al. A controlled trial of arthroscopic surgery for osteoarthritis of the knee. N Engl J Med 2002; 347:81–88

Introducing "Medical Writing Tips of the Month"

A New Section in *CHEST*

"Given the importance of medical writing to the progress of civilization, one might expect the art to be widely cultivated and highly perfected. Such is not the case at all. Modern medical literature is some of the most vapid, obscure, tortuous, and unreadable material in print."[1] We would submit that the obtaining of information, especially clinical information, involving as it does the cooperation and rights of patients, carries with it the inherent ethical obligation to communicate the knowledge that can be derived therefrom with maximal impact.

In this issue of *CHEST* (see page 822),[2] we introduce the first article of a new section, entitled "Medical Writing Tips of the Month." The purpose of this new section of *CHEST* is to improve the ability of our potential authors to write in the most understandable and communicative manner possible and to enhance the understanding of our readers. As Dr. Richard Irwin noted in his recent editorials,[3,4] the new focus and structure of *CHEST* includes a variety of new sections to educate our readers and to provide new areas of content.

To that end, we have recruited a group of highly experienced authors, editors, and biostatisticians to give us the benefit of their experience in a wide and, we believe, highly interesting range of topics concerning medical writing. Each month will bring you an article on a different topic. This should be of great interest and value not only to authors, but also to readers, enhancing the ability to critically appraise medical papers.

Articles in this section will essentially consist of two formats: one consisting of actual examples of poor communication (*eg*, "What is wrong with this . . . ?"), with suggestions for how they might be improved; and the other addressing concepts related to communications in the field of medicine, such as the "Uniform Requirements for the Submission of Manuscripts to Biomedical Journals" and publishing ethics. Please inform us of any topic that you particularly wish to be addressed, and we will try to include it on our scheduled menu.

This section is yet another aspect of the goal of *CHEST* to contribute to the area of education in the fields of pulmonary, critical care, and sleep medi-

cine; thoracic surgery; cardiorespiratory interactions; and related disciplines; and to provide interesting and valuable content to members of the American College of Chest Physicians and to *CHEST* readers and subscribers.

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References

1 Dirckx JH. The language of medicine. 2nd ed. Westport, CT: Praeger 1983; 171
2 Welch SJ. Preparing manuscripts for online submission: basic information and avoidance of common pitfalls. Chest 2006; 129:822–825
3 Irwin RS. The editorial stewardship of *CHEST* changes hands. CHEST 2005; 128:1–3
4 Irwin RS. A new "face" of *CHEST* heralds a new era. CHEST 2006; 129:1–3

Mixed vs Central Venous Oxygen Saturation May Be Not Numerically Equal, But Both Are Still Clinically Useful

Mixed venous oxygen saturation ($S\bar{v}O_2$) in sepsis is commonly referred to as an *end point of low impact* on clinical decisions in sepsis patients because of the following common refrain: "$S\bar{v}O_2$ is always increased in septic ICU patients." However, there are fundamental principles that render this modality clinically useful when applying it to the supply-dependent phase of sepsis (*ie*, global tissue hypoxia). The presence of global tissue hypoxia not only has pathologic significance *in vitro*,[1] but there is a pathologic link among the clinical presence of global tissue hypoxia (*ie*, low $S\bar{v}O_2$ and cardiac index), the generation of inflammatory mediators, and mitochondrial impairment of oxygen utilization that is seen in septic ICU patients.[2] Furthermore, identifying sudden episodes of supply dependency in septic ICU patients (*ie*, sudden decreases in $S\bar{v}O_2$) has diagnostic and prognostic significance.[3] With this background, the rationale for using central venous oxygen ($ScvO_2$) saturation as a surrogate for $S\bar{v}O_2$ to detect and treat global tissue hypoxia in the most proximal phase of sepsis management (supply dependency) was the basis for its use in the Early Goal Directed Therapy in Severe Sepsis and Septic Shock Study (EGDT).[4]

Early hemodynamic assessment using physical examination, vital signs,[5] central venous pressure,[6] and urinary output[7] fails to detect supply dependency or persistent global tissue hypoxia. Shock patients who are resuscitated to having normal vital signs continue to exhibit evidence of global tissue hypoxia ($ScvO_2 < 70\%$ and increased lactate levels) and require additional resuscitation, as shown by Rady et al.[6] Similar findings were confirmed in the EGDT study as 39.8% of the control group vs 5% of the EGDT group continued to have global tissue hypoxia after 6 h of resuscitation despite the fact that all patients attained the same vital sign goals (*ie*, MAP, > 65 mm Hg; CVP, > 8 mm Hg; urine output, 0.5 mL/kg/h). These findings of global tissue hypoxia, or "cryptic shock," in patients[8] have prognostic significance as this state was associated with a 56.5% in-hospital mortality rate. The therapeutic significance was realized as the EGDT patients received early and more aggressive therapy with fluids, RBC transfusion, and inotropic agents.

The question of whether the $ScvO_2$ is a numeric equivalent to $S\bar{v}O_2$ has been examined in a number of studies,[9–12] which continues to fuel this debate. These studies, including the trial by Chawla et al,[11] have consistently shown that $ScvO_2$ values are (on average) approximately 5% higher than $S\bar{v}O_2$ values, which is likely secondary to the contributions of deoxygenated blood from the coronary sinus. Recognizing this minor, yet consistent, difference allows the clinician to make an accurate assessment of global tissue hypoxia. Furthermore, the clinical utility of an end point of resuscitation is determined by whether it changes clinical practice, morbidity, and mortality in a cohort of patients under the rigors of an appropriately designed clinical trial. In other words, has this end point been calibrated to have clinical utility in the setting in which it is to be used? This was done with $ScvO_2$ in the EGDT study,[4] in which the range of $ScvO_2$ values was 48.6 to 49.2%, with lactate levels of 6.9 to 7.7 mmol/L indicating significant supply dependency. Using the finding from Chawla et al,[11] the $S\bar{v}O_2$ values would be extrapolated to 43 to 45%. Thus, irrespective of whether the $ScvO_2$ value equals the $S\bar{v}O_2$ value, the presence of a low $ScvO_2$ level in patients with early sepsis portends increased morbidity and mortality, and correcting this value according to a consensus-derived algorithm[13] improves morbidity and mortality. It should be further noted that, in this well-designed study by Chawla et al,[11] the majority of the