EDITORIAL

Aiming at Excellence in the Management of Pulmonary Thromboembolism

Buscando la excelencia en el manejo de la tromboembolia de pulmón

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Pulmonary thromboembolism (PTE) is a fascinating and frustrating disease, but some studies suggest that short-term mortality after a PTE episode has decreased in the last decades. The RIETE registry evaluated short-term mortality trends in 23,858 patients with confirmed acute symptomatic PTE diagnosis between 2001 and 2013, (1) and found that 30-day all-cause mortality following the diagnosis had been reduced from 6.6 to 4.9% and that PTE specific mortality had decreased from 3.3% to 1.8% in that period.

Several reasons could justify this survival improvement in patients with acute symptomatic PTE. The almost universal use of multidetector computed tomography angiography (MD-CTA) diagnoses small clots with scarce relevance in the vital prognosis of patients; nevertheless, there are also some interventions which have demonstrated to impact on the survival of patients with suspected or confirmed acute symptomatic PTE diagnosis. Roy et al. studied 1,529 consecutive ambulatory patients attending the Emergency Department with suspected acute symptomatic PTE. (2) According to clinical practice guidelines, the diagnostic evaluation was inappropriate in 662 patients (43%), and inadequate management was significantly associated with thrombotic events during follow-up [adjusted odds ratio (OR): 4.29; 95% confidence interval (CI): 1.45 to 12.70]. Similarly, Jiménez et al. showed that lack of adherence to clinical practice guideline recommendations for the treatment of the acute phase of PTE significantly worsened patient prognosis. (3) This study included 2,096 patients diagnosed with acute symptomatic PTE, 408 of which (20%) did not receive adequate treatment according to guideline recommendations. An ineffective treatment was significantly associated with higher all-cause mortality (adjusted OR: 2.39; 95% CI: 1.57 to 3.61) and specific PTE mortality (adjusted OR: 5.02; 95% CI: 2.42 to 10.42) during the first 30 days of follow-up. These results were validated in 34,380 patients with PTE from the RIETE registry.

Consistent with these data and some studies confirming PTE management variability, (4) the registry published in the last issue of the Argentine Journal of Cardiology has great value and its authors should be satisfied by the work accomplished. (5) This registry included 684 patients with acute symptomatic PTE admitted to 75 centers of Argentina. The most important findings of this registry could be summarized in the following points: 1) only 68% of patients diagnosed with PTE during hospitalization were receiving antithrombotic therapy before the diagnosis; 2) only 2% of cases were idiopathic; 3) in-hospital mortality was 12%; and 4) only 49% of hemodynamically unstable patients received primary treatment.

It is probable that some of this registry's results (as the extremely low percentage of idiopathic events or the elevated short-term mortality) were the results of a selection bias. Forty-two percent of patients had anemia, 65% presented high levels of myocardial damage markers and 15% suffered from hemodynamic instability, which are more significant figures than those of other international registries published so far. However, the relevance of this registry lies on the possibility of identifying those scenarios amenable for improvement in PTE management.

Venous thromboembolic disease (VTED) is one of the most important preventable causes of in-hospital mortality. (6) As most hospitalized patients have more than one risk factor for VTED (surgery, immobilization, cancer, etc.), healthcare authorities are making great efforts to advise physicians about this health problem. In this sense, the participating centers should develop hospital policies to improve VTED prevention measures among admitted patients.

The PEITHO clinical trial compared tecnetoplase plus heparin with placebo plus heparin in 1,004 patients with intermediate-high risk PTE. (7) The results of this study demonstrated that fibrinolytic treatment prevented hemodynamic collapse (1.6% vs. 5.0%, p=0.002), but increased major bleeding (11.5% vs. 2.4%, p <0.001) and intracranial hemorrhage (2.0% vs. 0.2%, p=0.003). In accordance with the results of this clinical trial, scientific guidelines recommend standard anticoagulant therapy and close moni-

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toring of patients with intermediate-high risk PTE. Centers participating in this registry should use the necessary tools to reduce the percentage of patients with intermediate-high risk PTE undergoing reperfusion treatments.

Less than half of the present registry patients with high-risk PTE received reperfusion treatments. Previous studies have confirmed that fibrinolytic therapy is underutilized in patients with high-risk PTE, and that this underuse is associated with a significant increase of death exclusively due to PTE during the first 30 days of follow-up. (8) Again, participating centers should use the required instruments to increase the percentage of patients with high-risk PTE receiving treatments.

In conclusion, this registry provides very useful information about the characteristics of patients with acute symptomatic PTE treated in the participating centers, and also helps to identify those areas that could be improved, thus contributing to increase these patients' survival.

Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/Supplementary material).

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