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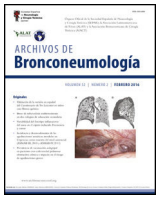

Editorial

The implication of including Interventional Radiologists in multidisciplinary pulmonary embolism treatment teams

Venous thromboembolic disease (VTE) is a pathology that encompasses deep vein thrombosis (DVT) and pulmonary embolism (PE), with an incidence of approximately 116 cases per 100,000 inhabitants in Europe[1] and up to 1 per 1000 inhabitants in the United States.[2] Acute PE is the leading cause of hypertensive lung disease and right ventricular failure, with a mortality of up to 68% in massive PE in the first three months.[3]

PE can be divided into massive (high-risk) and submassive (intermediate-risk). The American College of Chest Physicians (ACCP) clinical guidelines differentiate treatment of these two classifications, recommending endovascular therapy in massive PE only when systemic fibrinolysis fails or is contraindicated.[4] The European Society of Cardiology (ESC) in collaboration with the European Respiratory Society (ERS) in their 2019 consensus[5] developed a clinical guideline for the diagnosis and management of acute PE in which they indicate that, in the management of high-risk PE, systemic thrombolysis is the treatment of choice. Catheter directed thrombolysis (CDT) or surgical pulmonary embolectomy are alternative reperfusion options in patients with contraindications to thrombolysis, if experience with these methods and adequate resources are available. In intermediate-risk PE, where the management of choice is oral or parenteral anticoagulation, rescue thrombolytic therapy or, alternatively, surgical embolectomy or CDT should be reserved for patients with haemodynamic instability.

Systemic use of thrombolytics carries an increased bleeding risk of up to 20% and tPA doses of up to 100 mg over 2 h, which is associated with an increased likelihood of intracranial haemorrhage of up to 3–5%. Current treatment strategies in PD should aim at resolving pulmonary tree obstruction, right heart dysfunction and haemodynamic instability, avoiding chronic pulmonary hypertension and decreasing the risk of haemorrhage.

Relegating the indication for a technique, in this case CDT or thrombectomy, to patients who are exclusively unstable on admission, who become unstable early or who have a poor baseline prognosis, selects a cohort of patients who have a worse prognosis. This is why decision making should rely on a coordinated multidisciplinary group.

Studies such as PERFECT,[6] associate a high clinical success rate with a low rate of major complications and improvements in cardiac and respiratory parameters in this type of patient. The decision to treat should be individualised according to clinical evolution, and this should be the parameter that decides whether to scale up the application of different therapeutic techniques, taking into account the resources and professionals available at each centre.

In 2011, the concept of Pulmonary Embolism Response Teams (PERT) was developed at Massachusetts General Hospital (United States). Basically, they are multidisciplinary teams coordinated in decision making for the individualised treatment of intermediate and high-risk PE patients. Especially intermediate-risk patients are a very heterogeneous population where a multidisciplinary scientific committee is particularly useful. There is now a National PERT Consortium with more than 180 groups in the United States and the concept has spread beyond its borders.[7,8]

The establishment of multidisciplinary teams (call them PERT or TEP Code) depends on many factors: from the political-administrative strategy, to the competency element between specialties, to the simple willingness of specialists to participate.

Each hospital has its own organisation, even within its area of influence; precisely because of this, the implementation of a new technique depends on the resources available and the skill of its professionals, as has been shown in recent years with the stroke code units.

Galmer et al.[9] define three levels of possible response in PERTs: basic, advanced and centres of excellence. They are based on the fulfilment of items differentiated into 6 fields: process, evaluation, medical, procedure, surgical and research.

It is in the area of procedure that interventional radiology has its contribution and participation, as these are common procedures in clinical practice. It should be remembered that only 12% of PEs receive CDT or thrombectomy (mechanical aspiration or surgical) and 15% will have an inferior vena cava filter placed.[10]

The organisation of this multidisciplinary team should not be based so much on who should do what, but on who is most used to doing it and what is available in the health care setting. The answer to this question will determine the efficiency and safety of the entire therapeutic process of managing the clinical situation of intermediate-high risk PD. For example, implanting a filter is not essentially difficult, but knowing when and how to remove it may be more complex. The PREPIC 2 study did not recommend its placement in a generalised manner in patients with anticoagulation and submassive PE, a fact that is also pointed out in the multidisciplinary consensus for the management of pulmonary thromboembolism,[11] but there will always be cases in which it should be placed.[12]

The only speciality without competence will be cardiovascular surgery in the limited cases of surgical thrombectomy. For the rest, balance should be sought with as much participation as possible from specialties that add value in rapid decision making depending on the hospital ecosystem.[13]

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Kabhrel[10] comments that if patients with massive or submassive PE were homogeneous and there were robust data on the type of treatment to follow in the decision tree, multidisciplinary teams would not be necessary.

It will always be essential that someone mentors and coordinates the decision-making process based on the opinion of each of the participants in the multidisciplinary team. From our point of view, it should be Pneumology, in the same way that in the stroke code it is Neurology.

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