Pericardial diseases – a brief review of the main syndromes

In the era of evidence-based medicine the extent of data from clinical trials and basic research is expanding constantly, and in order to assist a physician in clinical decision making, a set of recommendations in the particular field is published periodically. We recently reviewed the main novelties of the latest European Society of Cardiology guidelines on management and treatment of pericardial diseases and we discuss them briefly in this article.

The pericardium is a double-layered sac enclosing the heart and consisting of an outer (parietal) and an inner (visceral) layer with a pericardial cavity, containing pericardial fluid, between them. The pericardium confines the heart to the chest region, prevents from dilation of cardiac chambers, provides lubrication and protects the heart from infections. Several pathological processes may involve the pericardium and, therefore, disrupt the normal functioning of the heart.

Acute pericarditis is the most common syndrome caused by an inflammation of the pericardium, which may be induced by viral or bacterial infection, autoimmune or neoplastic disease, traumatic or metabolic condition as well as other less common causes. For diagnosis of acute pericarditis at least 2 of 4 criteria should be fulfilled: pericardial chest pain, pericardial rubs, typical electrocardiographic changes and existence of a new or worsening pericardial effusion. Treatment of patients with acute pericarditis consists of high-dose aspirin (750-1000 mg every 8 hours) or non-steroidal anti-inflammatory drugs (NSAID) for 1-2 weeks, combined with colchicine. An addition of weight-adjusted doses of colchicine significantly improves the response to anti-inflammatory therapy and reduces recurrences and, therefore, it should be continued for 3 months. Nevertheless, recurrent episodes of pericarditis may affect up to one third of patients with acute pericarditis. Recurrent episode of pericarditis should be treated as well with anti-inflammatory therapy and colchicine until the complete response is obtained and slow tapering down should be completed afterward. Corticosteroids were associated with a higher risk of recurrence, more severe adverse effects and hospitalizations and, therefore, are not recommended as a first-line approach in the treatment of either acute or recurrent pericarditis.

Fluid accumulation in the intra-pericardial space may result from increased production due to an inflammatory process evolving pericardial layers or decreased reabsorption as a result of congestive heart failure or pulmonary hypertension. Pericardial effusion could range from asymptomatic, which is detected accidentally, to life-threatening cardiac tamponade. Clinical presentation of pericardial effusion depends on the amount of fluid and accumulation rate. Bleeding, caused by trauma, surgical complication or anti-coagulant therapy, possessing the highest risk to produce cardiac tamponade. The management of pericardial effusion depends on its severity: Pericardial tamponade must be managed promptly by drainage, either percutaneous or surgical. Furthermore, when underlying malignancy or bacterial infection is suspected, fluid sampling should be performed as well. Otherwise, and if any elevated inflammatory markers are present, a trial of anti-inflammatory medical treatment is suggested. Nevertheless, evaluation for existence of underlying conditions should be conducted.

The disruption in healing of acute pericarditis or the resorption of pericardial effusion may lead to obliteration of pericardial sac and development of a scar that impairs normal filling of cardiac chambers. The risk of acute pericarditis progressing to a constrictive phase depends on its etiology, with bacterial infections possessing the highest risk. A transient form of constrictive pericarditis may emerge from the acute inflammation and responds well to anti-inflammatory therapy and, therefore, a trial of medical treatment is recommended as a first approach in newly diagnosed constrictive pericarditis. The mainstay of treatment for chronic constrictive pericarditis is, however, a resection of the pericardium, which should be performed in an experienced center.

In summary, clinical presentation and prognosis of pericardial syndromes may vary according to their etiology and main pathophysiology and, therefore, treatment and management should be chosen accordingly.

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