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Lung involvement in inflammatory rheumatic diseases☆

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A B S T R A C T

This chapter describes the involvement of the lung in systemic inflammatory joint disease (IJD) with a particular focus on rheumatoid arthritis, although the topics of pulmonary involvement in ankylosing spondylitis and psoriatic arthritis are also addressed. Interstitial lung disease is the most lethal pulmonary complication of IJD and the chapter describes recent advances in both our understanding of this complication and the therapeutic options that offer real hope for improved outcomes. Although less well recognised, airways disease is just as common and its association with IJD is described in some detail, with a section devoted to the recent surge in interest in bronchiectasis. Acute pulmonary infection is common in IJD and its management is reviewed in some detail. Although pleural disease is less common than it once was, its treatment is explored. We conclude by reviewing the relationship between the drug therapies employed in IJD and their effects on the lung.

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Practice points

1 Lung disorders are common in patients with inflammatory joint disease (IJD)
2 The prognosis of interstitial lung disease (ILD) is determined by its extent and subtype
3 Bronchiectasis (BR) is common in rheumatoid arthritis (RA) and may precede or complicate articular disease
4 Patients with anti-cyclic citrullinated peptide (CCP) antibodies are much more likely to get either ILD or BR
5 Pneumonia is common in RA, but the risk can be reduced by effective immunisation
6 Drugs used in the treatment of IJD can contribute significantly to respiratory disease

Research agenda

1 Understanding the relationship between anti-CCP and the development of lung disease
2 Randomised controlled studies of the role of newer therapies in the treatment of RA-ILD
3 Criteria to use in the selection of biologic agents to treat patients with IJD and lung disease

Introduction

Several systemic inflammatory joint diseases (IJD) are known to be associated with lung disease. These include rheumatoid (RA) arthritis, psoriatic arthritis (Ps A) and ankylosing spondylitis (AS).

RA is the most common inflammatory autoimmune arthritis, affecting 0.5%–1% of the population worldwide [1]. Whilst the main presentation is joint disease, there are a number of extra-articular manifestations. Pulmonary disease in particular is common and may affect all areas of the lung, including the airways, pleura, parenchyma and vasculature [1], leading to significant morbidity and mortality. Indeed, lung disease is the second most common cause of death in RA after cardiovascular disease. Mortality in these patients is exacerbated by their susceptibility to infection, particularly as the majority of RA drugs are immunosuppressive.

Interstitial lung disease (ILD), a diffuse progressive disease of the lung parenchyma, is the most serious manifestation of RA lung disease, although the exact prevalence varies depending on the population studied and the diagnostic modality used to identify the disease. Other common manifestations of RA lung disease include airways disease, bronchiectasis (BR), pleural disease and drug-induced pulmonary toxicity. Mechanisms of lung pathology have been attributed to genetic predisposition, smoking, chronic immune activation, environmental exposure, increased susceptibility to infection (often related to immune-modulating medications) and drug toxicity [2].

Many of the respiratory manifestations in RA occur within the first 5 years of the disease [3], and in 10–20% of cases [4], respiratory symptoms may precede the onset of articular symptoms. However, patients with pulmonary disease may be asymptomatic, or respiratory symptoms may be masked by poor functional status because of joint disease or chronic inflammation [5]. In seronegative disorders and spondylitis, pulmonary involvement is rarer and usually occurs late in the disease process.

Rheumatoid arthritis

Interstitial lung disease

Introduction

ILD is a progressive fibrotic disease of the lung parenchyma and is the most common and most important pulmonary extra-articular manifestation of RA, contributing significantly to increased morbidity and mortality [6–8].

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