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Cases Managed with a Class of Pain Medications

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Abstract

To support specialists and patients to improve the management of Rheumatoid Arthritis. Moreover, emphasizing the efficacy and safety profiles of new biologic 's can help specialists decide to switch from conventional 's to targeted therapy, also providing updated information for rheumatology guidelines.

Keywords: Accumulation; Stimulation; Syndrome; Biases; Environment; Rural areas

Introduction

In addition, relevant scientific information was systematically evaluated, and the focus was on optimizing the management, both by examining evidence-based medicine articles and by updating and centralizing the new therapeutic approaches with the implementation of personalized medicine in a context of an incurable disease [1]. During the previous year's numerous scientists have extensively studied variation of the prevalence and incidence. These studies have demonstrated that a global disease distributed worldwide, regardless ce, sex, ethnicity, nationality, age, etc. However, the results of prevalence and incidence measurements vary depending on the population characteristics and have changed over time.

Epidemiologicalstudiesmeasuringtheprevalenceinafew European, Asian, North American, and South American countries between 1990 and 2005 reported pertinent and relevant results. Low prevalence ratios were reported in Serbia, China, France, Italy, and the US, while higher prevalence ratios were observed in Japan and Argentina. It is worth pointing out that older studies can face methodological biases resulting in differences in the prevalence because the types of studies conducted were significantly different: cross-sectional studies, random selection, telephone survey, postal questionnaire, inception cohort, outpatient, and hospitalization medical records. Moreover, it was observed that gender differences exist in the prevalence. All the studies reported a three- to five-fold higher prevalence in females than males [2].. The most significant difference was reported by the Argentinian study, while the closest values were reported in Serbia.

Discussion

The prevalence has been rising almost unanimously since 1990 up to date. The largest increase was observed in the Spanish population. However, in Japan and Argentina the prevalence ratios have decreased over the years. Nowadays, the global prevalence ratio is about 1% and it is more common in women, with small continuous fluctuations and an apparent growth from south to north, and from countryside to metropolitan areas .From an epidemiological perspective, the incidence varies by age and population. Studies have been conducted over years to measure the incidence in certain geographical areas and for identifying variables that have led to different results. The data collection methods used were types of observational studies, including inception cohort, longitudinal population-based study, review of medical records, and prospective case-control studies, and were conducted between 1985 and 2002 [3]. Lower incidence rates have been reported in Japan. The highest incidence rate has been observed in the US. It has also been reported that the incidence in women is significantly higher than in men. However, recent studies have reported a fluctuating incidence over the past three decades. Therefore, the incidence ratios in the US ranged from 40 cases per 100,000 inhabitants in 1994 to 43 cases per 100,000 inhabitants in 2004 and nowadays RA has an incidence of 41 cases per 100,000 inhabitants. The influence of age on the incidence has been assessed by studies that have shown an increase with age up to 80 years when it begins to decline. Moreover, the incidence rate has decreased progressively in the last 60 years, being much more significant among women. Several studies have reported differences in incidence rates at the regional level within countries. One potential explanation for these variations may have been environmental exposure to chemicals, climatic changes, infectious diseases, and food. Furthermore, it has been reported that people with a low socio-economic background, living in rural areas during childhood, are at a higher risk of developing RA in adulthood [4]. The latest studies have reported that the United Kingdom has the highest standardized incidence rate and Canada has had the biggest rise in the incidence rate in the last 30 years . The reasons for the increase in the incidence rate have no unequivocal explanation, but risk factors may play an important role.

A multifactorial disease caused by genetic, environmental and stochastic factors. The genetic risk that has been estimated by scientific studies is about 50%. The presence or absence of rheumatoid factor (RF) and ACPAs can divide RA into two types and there are also differences between the risk factors involved. Tyrosine phosphatase non-receptor type risk alleles, human leukocyte antigen D-related alleles, and tumours necrosis factor-receptor associated factor 1 and complement component related genes are the main genetic factors associated with an ACPA-positive subtype, while interferon regulatory factor 5 is confined to the ACPA-negative subtype [5].

As significant contributors to population health, environmental risk factors play an important role in the management. Like other diseases, smoking is linked to the development or exacerbation. The first evidence of the association of smokers with an increased risk was observed by serendipity in a study with a different purpose. Since then,

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it has become the best described risk factor. The harmful chemicals in tobacco products have been comprehensively evaluated and the results suggest that smoking delivers a specific signal. Smoking might be related to a genetic context with a specific role in triggering a particular subtype. It has been reported that smoking affects RF- or ACPA-positive RA, and has no or very little effect on ACPA-negative RA. Moreover, the risk of developing ACPA-positive RA is much higher in smokers who carry HLA-DR Beta 1 shared epitope alleles. It has not been observed that any association exists between passive smokers and the risk of developing RA. Exposure to silica dust is an occupational type of exposure that impacts RA. It has been reported there is an association between silicosis and RA, mainly affecting patients with ACPA-positive RA. Chronic exposure to silica can lead to rheumatoid pneumoconiosis, also known as Caplan's syndrome, a rare disease patients who have developed silicosis. Dietary factors and consuming habits have also been evaluated over time. Dietary agents influence RA and the evidence has shown that fasting periods and vegetarian diets can decrease the evolution. Moreover, avoiding red meat and increasing fruit and oily fish consumption can be associated with a decreased risk. It has been reported in a case-control study that alcohol consumption may have a beneficial effect on RA by lowering the risk of developing ACPA-positive RA, but this hypothesis requires additional investigation [6,7]. Therefore, a personalized diet for each person should be considered. Infections are biological risk factors that might trigger the development. A comparative cohort study reported that the risk of joint, skin and bone infections is much higher in patients with RA compared with non-inflammatory rheumatic diseases. Moreover, bacterial triggers have also been identified in the case of Lyme arthritis, a pathology with many similarities to RA. Porphyromonas gingivalis is a pathogenic bacterium that causes periodontal disease. Due to its role in inducing citrullination and promoting osteoclast genesis, an association between RA and periodontal disease has been reported. A comprehensive characterization of the interaction between environment, genes and stochastic factors may be the basis for understanding the complexity of the bio-molecular mechanisms that coordinate RA.

Although the pathophysiological mechanisms are not fully elucidated, several hypotheses have been postulated. It has been reported that immunological processes can occur many years before symptoms of joint inflammation are noticed, the so-called pre-RA phase. The interactions between epigenetic modifications on the genomic structure and environmental factors can lead to modified self-antigens as in the case of immunoglobulin G, type 2 collagen and vimentin [8,9]. These proteins with arginine residues can be converted to citrulline by peptidyl arginine deiminases in a post-translational modification called citrullination. Moreover, joint disorders like synovial hyperplasia or synovial infections can trigger cytokine release that may cause joint inflammation and also modified self-antigens. Due to the susceptibility genes HLA-DR1 and HLA-DR4, the immune system is no longer able to recognize citrullinated proteins as self-structures. Antigens are taken up by antigen-presenting cells (APC), which are dendritic cells that are activated to initiate an immune response. The whole complex migrates to the lymph node, where the activation of CD4+ helper T cells takes place. Furthermore, the germinal center of the lymph node contains B cells that get activated by reciprocal and sequential signals with T cells, an immunological process called co-stimulation. An example of co-stimulation is the interaction between CD28 and CD80/86. At this level, B cells undergo somatic hypermutation or class-switch recombination and start to proliferate and differentiate intro plasma cells that produce autoantibodies depending on the receptors of the precursor cells. Autoantibodies are proteins produced by an immune system that no longer discriminates self from non-self-structures, so self-tissues and organs are accidentally targeted. RF and ACPA are the most studied autoantibodies involved in RA. RF is an IgM antibody with a testing specificity of 85% in RA patients, which targets the Fc portion of IgG, also called the constant region [10]. It also forms an immune complex with IgG and complement protein, a complex able to migrate in the synovial fluid. However, ACPA is more specific and targets citrullinated proteins and after their binding interactions, immune complexes are formed with an accumulation in the synovial fluid.

Conclusion

The nerve and its branches innervate about Therefore the children of Israel eat not of the sinew which shrank, which is upon the hollow of the thigh, unto this day because he touched the hollow of Jacob's thigh in the sinew that muscles on each side of the body, more than any other nerve

Acknowledgement

None

Conflict of Interest

None

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