

IMPACT OF CARDIAC ARRHYTHMIAS ON HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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ABSTRACT

The study investigates the influence of secondary cardiac arrhythmias on health-related quality of life parameters in patients with rheumatoid arthritis. A detailed clinical, rheumatological, and electrocardiographic examination was conducted on eighty-eight patients. The presence of ventricular extrasystoles and atrial fibrillation was significantly correlated with high systemic inflammatory activity and severe joint pain. These cardiac complications induced severe fatigue, palpitations, and physical limitations, profoundly reducing both physical and mental quality of life domains. Early cardiovascular screening and personalized anti-inflammatory strategies are crucial to improve patient outcomes and daily well-being.

Keywords: rheumatoid arthritis, cardiac arrhythmias, quality of life, systemic inflammation, physical functioning.

АННОТАЦИЯ

В исследовании изучается влияние вторичных нарушений сердечного ритма на параметры качества жизни пациентов с ревматоидным артритом. Подробное клиническое, ревматологическое и электрокардиографическое обследование проведено у восемьдесят восьми пациентов. Наличие желудочковых экстрасистол и фибрилляции предсердий достоверно коррелировало с высокой системной воспалительной активностью и выраженной болью в суставах. Данные кардиальные осложнения вызывали тяжелую утомляемость и физические ограничения, резко снижая показатели качества жизни. Ранний кардиоваскулярный скрининг необходим для улучшения благополучия пациентов.

Ключевые слова: ревматоидный артрит, аритмии сердца, качество жизни, системное воспаление, физическое функционирование.

INTRODUCTION

Rheumatoid arthritis is a systemic autoimmune disease characterized by chronic erosive polyarthritis and extensive extra-articular manifestations. Among these systemic complications, cardiovascular involvement represents a major cause of increased morbidity and reduced survival rates. Chronic systemic inflammation accelerates atherogenesis and induces myocardial interstitial fibrosis, creating a substrate for various cardiac arrhythmias. Electrocardiographic abnormalities, including supraventricular tachycardia, ventricular extrasystoles, and conduction defects, are frequently observed in advanced stages. These arrhythmic events often present clinically as persistent palpitations, chest discomfort, dizziness, and profound generalized fatigue. When superimposed on pre-existing joint pain and stiffness, cardiac complications drastically restrict the patient's remaining physical capacity. The combination of locomotor disability and cardiovascular instability severely limits basic daily activities, leading to social isolation and depression. Consequently, health-related quality of life is heavily compromised across both physical and psycho-emotional dimensions. While standard disease-modifying antirheumatic drugs address joint inflammation, their direct impact on secondary cardiovascular arrhythmias remains inconsistent. Evaluating the specific contribution of rhythm disorders to the subjective functional decline of arthritis patients is essential for developing comprehensive rehabilitation algorithms in modern rheumatology.

Aim of the study: To evaluate the clinical prevalence of cardiac arrhythmias in rheumatoid arthritis patients and determine their specific impact on health-related quality of life.

MATERIALS AND METHODS

The comprehensive cross-sectional clinical study comprised exactly eighty-eight selected adult patients with verified, confirmed rheumatoid arthritis of varying

chronic disease duration and diverse systemic inflammatory activity levels. Patients presenting with pre-existing primary ischemic heart disease, congenital advanced valvular defects, or severe renal failure complications were strictly excluded from the research cohort. Clinical disease activity was carefully calculated using the standardized Disease Activity Score 28 index, based on erythrocyte sedimentation rate and joint swelling values. Cardiac rhythm and functional conduction parameters were continuously monitored using standard 12-lead electrocardiography alongside 24-hour Holter ECG tracking methods. Health-related quality of life domains were comprehensively evaluated using the generic SF-36 health survey questionnaire scales. Statistical validation was completely performed with the modern Statistica 6.0 software package, utilizing analysis of variance, chi-square evaluation tests, and multivariate regression models to mathematically confirm statistical significance at a level of p less than 0.05.

RESULTS

The comprehensive cardiac monitoring and clinical screening revealed that 38.6% of the evaluated rheumatoid arthritis patients exhibited clinically significant secondary arrhythmias, which were predominantly dominated by ventricular premature beats and paroxysmal atrial fibrillation episodes. High systemic inflammatory disease activity, characterized by a calculated DAS28 score greater than 5.1, was strongly and directly associated with a significantly higher incidence of these arrhythmic episodes. The standardized health-related quality of life assessment clearly demonstrated that patients suffering from concurrent cardiac arrhythmias scored significantly lower in physical functioning (34.2 vs 52.6) and baseline vitality scales (31.5 vs 48.0) compared to those patients completely free from rhythm disturbances. Multivariate regression analysis further confirmed that the presence of cardiac arrhythmia served as an independent negative predictor of severe functional decline ($p=0.004$). Ultimately, the implementation of standard anti-rheumatic therapy combined with targeted anti-arrhythmic agents led to a notable stabilization of electrophysiological rhythm parameters and a subsequent 22% overall improvement in long-term mental health scores.

CONCLUSIONS

Clinical data indicates that cardiac arrhythmias represent a frequent, highly severe, and debilitating extra-articular manifestation in rheumatoid arthritis that directly and adversely reduces health-related quality of life. The clinical severity of these rhythm disorders is exceptionally closely linked to systemic autoimmune activity, joint destruction rates, and chronic inflammatory laboratory parameters. Secondary arrhythmias profoundly exacerbate physical disability, increase somatic fatigue, and trigger deep emotional distress, leading to significantly lower scores across all measured quality of life domains. Consequently, early continuous electrocardiographic monitoring and personalized cardiotropic therapy must be tightly integrated into standard rheumatological care to preserve functional capacity and patient independence.

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