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ORIGINAL ARTICLE

Frequency of Rheumatoid Arthritis in Young Females Presenting with Multiple Joints Pain Using Acr Diagnostic Criteria

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ABSTRACT

Introduction: Rheumatoid arthritis (RA) is a chronic autoimmune disease causing morbidity and mortality in all population worldwide. It is present in 1 to 2 % in world's population

Objective: To determine the frequency of RA in young females presenting with multiple joints pain using ACR Diagnostic Criteria for RA.

Methodology: This study was Descriptive Cross-Sectional Study done at the Department of Medicine, Hayatabad Medical Complex, Peshawar for duration of six months from February 2021 to August 2021. In this study a total of 156 patients were observed to assess the frequency of rheumatoid arthritis in young females with multiple joints pain using ACR Diagnostic Criteria.

Results: Serology of RF and ACPA among 156 patients was positive in 93(59.6%) patients and Negative in 63(40.4). Acute phase reactants CRP and ESR among 156 patients were abnormal in 91(58.3%) and Normal in 65(41.7%) patients

Conclusion: Our study concludes that in young females with multiple joints pain, the frequency of rheumatoid arthritis was high by using ACR diagnostic criteria. Young females are prone to develop rheumatoid arthritis but remain undiagnosed and this may lead to adverse outcome and failure in prognosis and treatment. If it is diagnosed in early stage it may add to good health outcome and quality of life.

Key words: Rheumatoid arthritis; multiple joints pain, ACR Diagnostic Criteria

INTRODUCTION

Rheumatoid Arthritis (RA) is a chronic autoimmune disease-causing morbidity and mortality in all population worldwide [1]. It is present in 1 to 2 % in world's population. Women are affected more by the RA in young age almost 3 times more than men in young age [2]. In Pakistan the prevalence of RA is about 0.142% [3].

The increased incidence of RA in females is unknown but it is suggested that sex hormones play important role in the mechanism of RA [4]. Literature shows that the signs and symptoms and incidence of RA and its flare decreases in pregnancy and increases post partum [5]. RA is more common in females with null parity suggesting that hormonal variations play some role in the RA [6, 7]. The contraceptive use is considered to decrease the incidence of RA [8]. The prevalence of RA in old age has no gender difference and affects both the gender equally. First degree relative have more risk of developing RA [9].

According to a study by Shamim R et al, out of 316 patients presenting with arthralgia, 85 had RA. Out of 85 patients with RA, 60 (70.5%) were females [10]. The prevalence of RA varies in region and race. Tropical countries are less affected by the RA [11].

The pathogenesis of the RA is unknown but an autoimmune process is involved in the pathogenesis of the RA. RA results due to the complex autoimmune reactions like CD4 T cells, osteoclasts, mono nuclear phagocytes, B cells and cytokines etc. synovial cell hyperplasia and the endothelial cell activation leads to inflammation and destruction of the cartilages and bones [12].

The clinical manifestations of the RA involve the persistent symmetric poly arthritis, constitutional symptoms and extraiirticular involvement. RA usually affects joints of hands, feet, wrists, elbows and knees etc. It is a systemic disease affecting other parts of the body as well. It affects the cardiovascular and respiratory systems most commonly [13]. The RA is diagnosed on the basis of criteria by the American college of rheumatology (ACR). This criteria addresses the treatment approaches in RA patients [14]. Being a progressive disease, it can lead to joint destruction and disability if not properly treated. New standards for RA classification provide opportunities for early treatment. Initiating treatment with Disease modifying anti rheumatic drugs (DMARDs), especially in combination with short-term corticosteroids, can prevent progression and even alter the natural course of RA [15]. In a recent study it is stated that involvement of multi-joint specially hand arthritis was the largest predictor of poor outcomes [16].

Young females are prone to develop RA but remain undiagnosed and this may lead to adverse outcome and failure in prognosis and treatment. If it is diagnosed in early stage it may add to good health outcome and of life quality. Our study was piloted to assess the frequency of RA in young females using the ACR diagnostic criteria in patients presented in tertiary care hospital. As the epidemiology of RA varies in gender, races and geography so this study will help us to determine the burden of disease in our population in young females.

MATERIALS AND METHODS

This descriptive cross-sectional study was carried out at the Department of Medicine, Hayatabad Medical Complex, Peshawar from February 2021 to August 2021. By using WHO calculator, sample size was 156. The inclusion criteria for our study include all female patients presenting with multiple joints pain with the duration of 6 months or more having age range 15-35 years whereas the exclusion criteria includes pregnant females**, s**erious chronic disease like heart failure, patients with history of addiction, psychiatric illness, untreated malignancy or neurological disorder. Proper approval to this study was taken from institutional research and ethical committee. Informed consent was signed from all the subjects of our study.

Based on inclusion criteria all patients presenting with multiple joints pain (4-10 joints without large joint or > 10 joints with at least one large joint) with the duration of 6 months or more (as per operational definition above) were evaluated according to the ACR criteria for RA. 10 CC of blood were obtained in all the patients and were immediately sent to the hospital laboratory for detecting RF, ACPA, CRP and ESR as these are the components of the ACR criteria for RA. All the laboratory investigations were done from single hospital laboratory under supervision of single pathologist having minimum of five years of experience. RA was labeled on the basis of ACR criteria score having scores of 6 or more out of 10. All the information like age, weight, height, BMI, ACR score in patients with multiple joints pain, ACR score in RA patients, joint involvement, serology, acute phase reactants and duration of multiple joints pain was recorded in a pre-design proforma. All the data analysis was carried out by SPSS version 16. Mean and standard were computed for quantitative (continues) variables whereas frequencies and percentages were calculated for categorical and nominal data.

RESULTS

Totally 156 subjects were enrolled in our study. Among 156 subjects, 48(30.8%) were having age 15-20 years, 32(20.5%) have age 21-25 years, 40(25.6%) have 26-30 years while 36(23.1%) participants have 31-35 years of age. The mean age (SD) was 25 (3.87) years. (Figure 1) Serology of RF and ACPA among 156 patients was positive in 93(59.6%) subjects and negative in 63(40.4) subjects. (Figure 2) Acute phase reactants CRP and ESR among 156 patients were abnormal 91(58.3%) subjects while normal in 65(41.7%) subjects. (Figure 3)

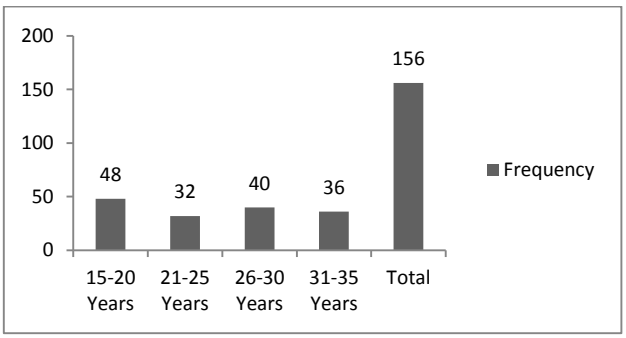

Figure 1: Subjects distribution based on age

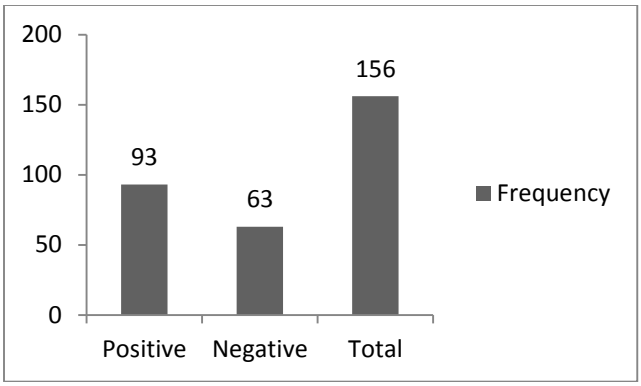

Figure 2: Distribution of subjects based on serology of RF and ACPA

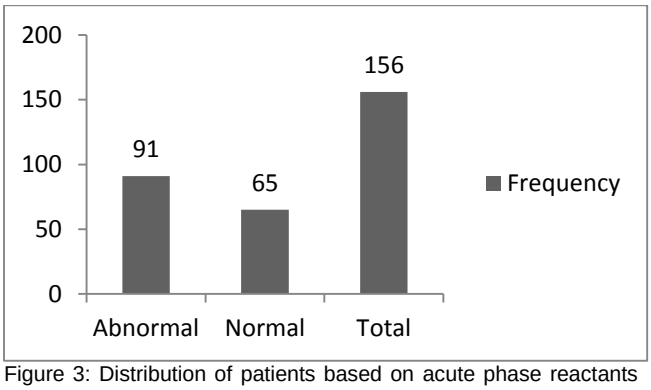

Figure 3: Distribution of patients based on acute phase reactants CRP and ESR

DISCUSSION

Pain, disability, and death are common outcomes of rheumatoid arthritis. Articular and extra-articular tissues both are affected by this inflammatory rheumatic illness [17]. In the vast majority of patients, chronic inflammation results in erosive joint deterioration and functional disability [18, 19]. The beginning of illness differs from patient to patient, depending on the kind, number, and degree of joint involvement. The intensity of the inflammatory process, as well as genetic makeup, incidence of swollen joints, serum autoantibody and inflammatory process severity, may all influence the course of the illness [20, 21]. sIn our study, Serology of RF and ACPA among 156 patients was positive in 93(59.6%) subjects and negative in 63(40.4) subjects. (Figure 2) Acute phase reactants CRP and ESR among 156 patients were abnormal 91(58.3%) subjects while normal in 65(41.7%) subjects. A previous study reported similar results to our study [22]. Another study done by Chunhua Xun et al. also reported comparable results to our study [23].

Early RA presents with symptoms that are similar to those seen in other inflammatory diseases. Patients with early RA are frequently characterized as undifferentiated arthritis, which is difficult to distinguish from those other inflammatory arthritis until a definitive diagnosis. In the past, patients with early RA were those who had symptoms for <2 years, with a predilection for <12 months. However, many rheumatologists are now willing to acknowledge individuals who had symptoms for no more than six weeks.. At this time, "early" RA is defined as those who have had

symptoms for less than three months [24]. However, not all researchers have adopted this classification, since some rheumatologists feel individuals have either developed RA or undifferentiated inflammatory arthritis.

Early therapy of RA may have a favorable influence on RA's prognosis, avoiding joint erosions and reducing the progression of erosive disease [25]. An early diagnosis and therapy might have an influence even if the disease is in remission [26]. It is difficult to distinguish early RA from non-RA at the outset of illness, and the use of ACR criteria for early diagnosis has limitations. Because there are insufficient clinical or laboratory evidences at the outset of arthritis, this criterion is insufficiently sensitive to detect early RA [27].

CONCLUSION

Our study concludes that in young females with multiple joints pain, the frequency of rheumatoid arthritis was high by using ACR diagnostic criteria. Young females are prone to develop rheumatoid arthritis but remain undiagnosed and this may lead to adverse outcome and failure in prognosis and treatment. If it is diagnosed in early stage it may add to good health outcome and quality of life.

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