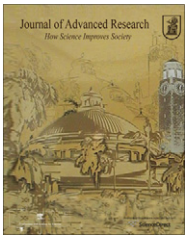
Journal of Advanced Research (2011) 2, 327–332

Cairo University

Journal of Advanced Research



ORIGINAL ARTICLE

Jaccoud's arthropathy in patients with systemic lupus erythematosus: One centre study

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Received 15 July 2010; revised 12 February 2011; accepted 16 February 2011
Available online 17 March 2011

KEYWORDS

Systemic lupus erythematosus;
Deforming arthropathy;
Jaccoud's arthropathy;
Anti-phospholipid syndrome;
Sicca syndrome

Abstract Jaccoud's arthropathy (JA) is a chronic, deforming, non-erosive arthropathy occurring in a subset of patients with systemic lupus erythematosus (SLE). In this research we aimed to evaluate clinical and immunological features in patients with SLE complicated by JA. Eighty seven consecutive SLE patients with a history of arthritis were included in the present study. These patients were subdivided according to "Jaccoud's arthropathy index" as follows: non-deforming arthropathy, mild deforming and definite Jaccoud. Demographic data, disease activity and disability were recorded. Rheumatoid factor (RF), anti-cardiolipin antibodies (ACL), antiSSA/Ro, and anti SSB/La antibodies, were assessed in all patients. We found clinical deforming arthropathy in 12 patients, among whom seven had definite JA. Both the mean duration of the disease and of arthritis were longer in the JA group compared to the non-deforming arthropathy group. JA patients presented a trend toward a lower quality of life. The prevalence of Sicca syndrome (SS) and antiphospholipid syndrome were significantly higher in the JA group than in the patients with non-deforming arthropathy ($p = 0.011$ and 0.012, respectively). ACL and RF were more frequent

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Peer review under responsibility of Cairo University.
doi:10.1016/j.jare.2011.02.005

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among patients with JA ($p = 0.013$ and 0.036; respectively). These data suggest that JA is not rare and represents a subset of SLE with specific clinical and serological features. Future studies are needed to reveal the pathogenesis, the genetic association, the prevention, the stabilization and the appropriate cure for these patients.

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Introduction

Joint involvement in systemic lupus erythematosus (SLE) is one of the earliest and most common manifestations of this multi-systemic disease [1]. Lupus arthropathy is usually transient, migratory, non-erosive and reversible [2]. Occasionally, it may take a more chronic course, leading to non-erosive joint deformities, although erosive features indistinguishable from rheumatoid arthritis occur rarely [3].

Non-erosive arthropathy with marked articular dislocation or subluxation has been first described by Jaccoud in patients with rheumatic fever. Later investigators have reported complications of Jaccoud's arthropathy (JA) in other rheumatic diseases such as SLE [1–3]. JA has not been adequately evaluated because it is more easily manageable compared to life-threatening involvements such as renal disorders [1].

Given the wide variety of clinical features associated with SLE, there have been many attempts to identify subsets of patients for whom a given antibody specificity can be identified with JA. Several associations, such as the presence of antibodies against U1 RNP, RA 33, SS-A/Ro and SS-B/La, anti cardiolipin (aCL), lupus anticoagulants (LAC), and anti-mutated citrullinated vimentin, have been reported previously [1,4,5]. To our knowledge, no previous studies had dealt with the description of JA and its relation to clinical and immunological profiles among Egyptian SLE patients with arthritis. In that field, well-designed replication studies in populations with different ethnic backgrounds are necessary.

In this research, we aimed to evaluate clinical and immunological features in patients with SLE complicated by JA.

Patients and methods

A group of 87 consecutive patients affected by SLE with a documented history of arthritis were prospectively assessed. They all attended the Department of Rheumatology and Rehabilitation Kasr El-Eini Hospital, Cairo University, and fulfilled the American College of Rheumatology (ACR) criteria for the diagnosis of SLE [6]. There were 83 women and four men with a mean age of 25.07 ± 6.77 years (14–47 years); the mean duration of SLE was 7.20 ± 4.06 years (5–17 years). Disease activity was assessed for all the patients using the SLE disease activity index (SLEDAI) [7]. The definition of JA had been based on clinical criteria (reversible articular deformities) together with the absence of bone erosions on radiographs. These patients were clinically evaluated, underwent a detailed physical examination and had their medical records revised.

Articular evaluation

Physical examination included a detailed standardized examination of the hands and feet. The following items were evaluated in each case: signs of arthritis of wrists and small joints of the hand, ulnar deviation of fingers, MCP subluxation, swan neck deformities of the fingers, Z deformity of the thumb, boutonnière deformities and deformities of the feet. Previous history with special attention to the presenting manifestation of SLE, cumulative ACR criteria, and time between arthritis and the development of deformity, were obtained from medical records. Deforming arthropathy was considered positive if there is deviation from any of the metacarpus finger axes (assessed with an angle goniometer) [8]. Those patients were then assessed for the presence of definite Jaccoud's arthropathy, using a JA index [9], which is dependent upon the different clinical symptoms and the severity of the deformities (details in Table 2). Patients who had scores exceeding five points were considered to have JA. The remaining patients were classified as having mild deforming arthropathy. Assessment of disability was done using the Health Assessment Questionnaire Disability Index (HAQ-DI) [10]. All the patients had recent X-ray film of the hands (postero-anterior view).

Organ system assessment

Clinical features were defined according to the ACR 1982 revised classification criteria for SLE [6]. Neuropsychiatric manifestations were defined according to the ACR nomenclature and case definitions for neuropsychiatric lupus [11]. Renal involvement was defined as glomerulonephritis on biopsy or with diastolic blood pressure >90 mm Hg, edema requiring diuretic therapy, proteinuria >0.5 g/24 h, abnormal urinary sediment manifested by RBC and leukocytes, creatinine clearance <60 ml/min or raised serum creatinine level >124 umol/l. Renal biopsy was available for 22 patients and evaluated according to the World Health Organization (WHO) classification of histological types of lupus nephritis [12]. Antiphospholipid syndrome was considered to be present if at least one of deep venous thrombosis (DVT), arterial thrombosis confirmed by Doppler imaging, or pregnancy morbidity was present, in addition to the presence of LAC and/or aCL [13]. Other organ system affections were defined as previously described [14].

Laboratory and immunological investigations

Routine laboratory examinations were collected from the patients' records. Detection of IgM rheumatoid factor (RF) was done by latex agglutination (Rose-Waaler test), antinuclear antibody (ANA) by indirect immunofluorescence on Hep-2 cells, and anti double stranded DNA (anti-dsDNA) antibody using a modified Farr assay. Anti-Ro/SSA and anti-La/SSB were searched by immunodiffusion (ImmunoConcepts, Sacramento, CA, USA). Anti-cardiolipin antibodies (aCL) were detected by ELISA using commercial kit (ImmunoConcepts, Sacramento, CA, USA). Lupus anticoagulants (LAC) were assessed by the dilute Russell's viper venom time and confirmatory tests [15].

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