

## EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS OF REITER'S SYNDROME IN JORDANIAN PATIENTS

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### ABSTRACT

**Objective:** To study the epidemiological and clinical features of Reiter's syndrome in patients who visited the rheumatology clinic in King Hussein Medical Centre (KHMC), Jordan.

**Methods:** A prospective study, including 43 patients with the diagnosis of Reiter's syndrome was done. Patients were assessed by taking complete history, physical examination and appropriate investigations including urinalysis and culture, stool examination and culture, synovial fluid analysis, complement fixation test for chlamydia trachomatis, complete blood count, erythrocyte sedimentation rate, rheumatoid factor, antinuclear antibodies, HLA-B27 and radiological study.

**Results:** All patients in this study were white men, with mean age of 26.3 years. HLA-B27 was positive in 37 patients (86%). Most cases were post venereal (32 patients, 74%) while the rest were dysenteric. The clinical manifestations were arthritis in all patients (100%), urethritis in 21 patients (48%), ocular involvement in 20 patients (46%), diarrhoea in 12 patients (28%), painless oral ulcers in 11 patients (26%), skin lesions in 5 patients (12%) and constitutional symptoms in 7 patients (16%). Arthritis was mostly oligoarticular (25 patients, 58%) with asymmetrical pattern in 34 patients (78%). Large joints of lower extremity were most involved (29 patients, 68%). Rheumatoid factor and antinuclear antibodies were negative in all patients. Relapses occurred in 7 patients (16%) after a mean period of 6.2 months.

**Conclusion:** It is concluded that the epidemiological and clinical features of Reiter's syndrome in Jordan are not different from those in the literature.

**KEY WORDS:** Reiter's Syndrome, Epidemiology, Reactive arthritides

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## INTRODUCTION

Reiter's syndrome is one of the reactive arthritides.<sup>1</sup> It occurs in genetically susceptible host following infection of the genitourinary or gastrointestinal tracts.<sup>2</sup> It is defined by the classical triad of arthritis, urethritis and conjunctivitis.<sup>3</sup> It mostly affects men in their third decade of life.<sup>4,5</sup>

In 1916 Hans Reiter described the case of cavalry officer who developed an acute dysenteric illness characterized by arthritis, urethritis and conjunctivitis.<sup>3</sup> In 1973-1974 Aho and colleagues reported aseptic arthritis following gut

infection with *Yersinia enterocolitica*, mostly in HLA-B27 patients and proposed a new name, reactive arthritis.<sup>6</sup>

Reiter's syndrome could occur following venereal disease or, less commonly, following dysentery. Pathogens commonly associated with Reiter's syndrome are *Shigella*, *Salmonella*, *Yersinia*, *Campylobacter*, *Amoeba* and *Chlamydia*.<sup>1</sup>

The estimated incidence of Reiter's syndrome is approximately 4/1000 per year.<sup>8</sup> The genetic predisposition to Reiter's syndrome is well established. Eighty percent of patients are positive to HLA-B27 compared to 6% of normal occasions<sup>1,7</sup>. Reiter's syndrome is rare in blacks<sup>1</sup>. In post venereal Reiter's syndrome, the male to female ratio is 5:1, while post dysenteric Reiter's syndrome shows equal sex distribution<sup>9</sup>. The peak onset is during the third decade of life<sup>4</sup>. It is rare in children<sup>4</sup>.

Reiter's syndrome presents usually with the classical triad of arthritis, urethritis and conjunctivitis<sup>3</sup>. Other manifestations may include fever, prodromal symptoms, rheumatology lesions, and gastrointestinal and cardiac involvement<sup>10</sup>. Reiter's syndrome could be incomplete when there is no evidence of enteric or urethral inflammation<sup>8</sup>.

## METHODS

Between October 2000 and December 2002, numerous patients presented with arthritis to the rheumatology clinic in KHMC. Forty-three patients were diagnosed to have Reiter's syndrome according to the revised 1981 criteria of the American College of Rheumatology. The mean follow up period was 21 months.

Clinical assessment was done by taking full history and doing careful physical examination. Age, sex and race were considered. Special attention was paid in history and physical examination to musculoskeletal system, urogenital tract, gastrointestinal tract, eyes and skin. Dermatologists, ophthalmologists and internists were consulted when necessary.

A laboratory profile including urinalysis and culture, stool analysis and culture, complement fixation test for *chlamydia trachomatis*, com-

plete blood count, erythrocyte sedimentation rate, rheumatoid factor, antinuclear antibodies and HLA-B27 antigen, was obtained. Synovial fluid aspiration from knee joints was done in 19 patients for analysis.

Radiological study of clinically involved axial joints (spine, sacroiliac joints) was done in 16 patients.

## RESULTS

All patients (43 patients) included in the study were white men. The average age in this group was 26.3 years (range 19-38 years). Thirty-two patients (74%) were diagnosed as post venereal Reiter's syndrome as they recalled history of dysuria, frequent micturition and/or urethral discharge 1-3 weeks prior to onset of arthritis. The rest of the group (11 patients, 26%) recalled history of diarrhoea 1-3 weeks before the first attack of arthritis, and thus were considered as cases of post dysenteric Reiter's syndrome. The average duration between the urinary symptoms (or stoppage of diarrhoea) and onset of arthritis was 2.6 weeks.

The clinical manifestations of Reiter's syndrome in our group of patients are summarized in Table-I.

Arthritis was found in all patients (100%), and was mostly oligoarticular (25 patients,

Table-I: Clinical Manifestations of Reiter's syndrome in our group of patients

<i>Clinical Manifestations</i>	<i>Number of Patients</i>	<i>Percentage of Patients</i>
Arthritis	43	100
Urethritis	21	48
Ocular Involvement	20	46
Diarrhoea	12	28
Painless Oral Ulcers	11	26
Skin Lesions (e.g. keratoderma- blenorrhagica)	5	12
Constitutional Symptoms (e.g. fever, myalgia)	7	16

58%). Fifteen patients (35%) were having polyarticular arthritis and the rest of the group (3 patients, 7%) were having monoarthritis. The pattern of arthritis was asymmetrical in most of the patients (34 patients, 78%). The commonest joints to be involved were the large, weight bearing joints of lower extremity (knees and ankles in 29 patients, 68%). The average number of the involved joints at the initial attack was 3.2 joints. Axial joints (spinal and sacroiliac joints) were clinically involved in 16 patients (38%) with radiological evidence of arthritis in 9 patients (21%). Enthesisopathy occurred in 12 patients (27%) in the form of Achilles tendonitis and plantar fasciitis. The mean of ESR at onset of arthritis was 86.7 mm/hour. Rheumatoid factor and antinuclear antibodies were negative in all patients. Synovial fluid analysis was done in 19 patients revealing aseptic mild to moderate inflammatory changes (most WBCs were polymorphs) with no growth upon culture.

Urethritis was the second most common manifestation of Reiter's syndrome (21 patients, 48%) presenting with dysuria and/or frequency with or without urethral discharge. Urinalysis showed pyuria in 12 patients (28%). Urine culture showed no growth in all patients. Complement fixation test for *Chlamydia trachomatis* was positive in 15 patients (34%).

The eyes were involved in 20 patients (46%). Seventeen patients (39%) had unilateral or bilateral conjunctivitis, while 3 patients (7%) were diagnosed by ophthalmologist to have uveitis. Mucocutaneous assessment revealed painless oral lesions in 11 patients (26%). Keratoderma blenorrhagica and/or circinate balanitis were found in 5 patients (12%), all were post venereal cases. Diarrhoea was reported, before onset of arthritis, in 12% patients (28%), with positive stool culture for *Shigella flexneri* in 8 patients and for *Salmonella* spp. in the other 4 patients. Constitutional symptoms in the form of fever, malaise and myalgia were reported in 7 patients (16%). During the study relapses occurred in 7 patients (16%) after mean period of 6.2 months.

## DISCUSSION

Reiter's syndrome is a reactive arthritis. In our study, 74% of cases were post venereal and 26% were post dysenteric. These results are comparable to those of other studies<sup>2</sup>. The average duration between urinary symptoms (or gastroenteritis) and the onset of arthritis was 2.6 weeks in our study, which falls in the range of 1-4 weeks adopted by literature<sup>11</sup>. All patients, in our group, were white men with average age of 26.3 years, which is consistent with other studies with mean age of 22.9<sup>5</sup> and 27 years<sup>4</sup>.

The high association with HLA-B27 suggests the genetic predisposition to Reiter's syndrome. Eighty percent of cases were positive for HLA-B27 in some studies<sup>7</sup> compared to 86% association in our group of patients. HLA-B27 is positive only in 6% of normal Caucasians<sup>1</sup>.

Arthritis was the commonest clinical manifestation of Reiter's syndrome in our study. All patients (100%) had arthritis, which was mostly oligoarticular and asymmetrical. Large, weight-bearing joints of lower extremity (knees and ankles) were the commonest joints to be involved. Many previous studies revealed similar results<sup>3-5</sup>. Radiological study showed evidence of sacroilitis in 21% of our patients, compared to 29.6% in other studies<sup>4</sup>. Synovial fluid analysis revealed aseptic inflammatory changes, which is similar to other studies<sup>3</sup>. Achilles tendonitis and plantar fasciitis were present in 27% of our patients, which is consistent with the literature<sup>12</sup>.

The second most common feature of Reiter's syndrome, in our study, was urethritis. Forty-eight percent of our patients showed clinical and/or laboratory evidence of urethritis. Complement fixation test for *Chlamydia trachomatis* was positive in 34% of our group. Association between Reiter's syndrome and *Chlamydial* infection was documented by previous studies<sup>13,14</sup>. Eyes were involved in 46% of our patients in the form of conjunctivitis, and to lesser extent, uveitis. Eyes were involved in 44.7%<sup>3</sup> and 86.7%<sup>4</sup> of patients in other studies. Painless oral lesions were found in 26% of

our group of patients compared to 37%<sup>3</sup> and 26.7%<sup>4</sup> in other studies. Circinate balanitis and/or keratoderma blenorrhagica were seen in 12% of our patients, which is consistent with other studies<sup>15</sup>.

Twenty-eight percent of our patients had an attack of diarrhoea before onset of arthritis. Stool culture was positive for *Shigella flexneri* in two-third of these cases of diarrhoea, and for *Salmonella* spp. in the other third. Similar data is mentioned in literature<sup>11</sup>. Non-specific prodromal symptoms were reported in 16% of patients in our study. The relapse rate of 16% after mean period of 6.2 months, in our study, is comparable to results of other studies<sup>11</sup>.

In conclusion, features of Reiter's syndrome in Jordanian patients are similar to features of Reiter's syndrome in literature.

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