



CLINICAL PRESENTATION AND QUALITY OF LIFE IN PATIENTS WITH ACUTE ANTERIOR UVEITIS ASSOCIATED WITH SERONEGATIVE SPONDYLOARTHROPATHIES

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ABSTRACT

Aim of the study : To characterize clinical features and quality of life in patients with acute anterior uveitis (AAU) associated with seronegative spondyloarthropathies (SpA).

Material and Methods : 68 SpA patients with or without AAU were included in the prospective clinical study. VF-14 questionnaire, macula OCT, lens opacities using LOCS III were assessed.

Results: Macula was thicker in uveitic (279.31 (53.64) μm) compared to fellow eyes (261.52 (43.714) μm), $p < 0.05$. More patients without AAU were treated with methotrexate, $p < 0.05$. VF-14 values differed between LOCS III grade P1 (93.29 (11.21)) and P3 (80.36 (8.18)); C1 (92.79 (11.79)) and C2 (85.92 (17.17)) and C3 (74.05 (11.89)); NO1 (92.06 (14.17)) and NO3 (84.82 (9.22) scores), $p < 0.05$.

Conclusions: Maculae thickness in uveitic eyes was increased. More patients without AAU were treated with methotrexate. VF-14 scores were lower for patients with higher LOCS III grade and recurrent AAU.

KEYWORDS : Anterior Uveitis – Seronegative Spondyloarthropathies – Clinical Presentation

Introduction

Acute anterior uveitis (AAU) is the most common form of uveitis (75–90%) in Western countries for adults (1) which is decreasing quality of life (2). The etiology of AAU includes autoimmune disorders, inflammatory diseases, trauma, infections. However, in ~25% patients the causes remain unknown (3,4).

Seronegative spondyloarthropathies (SpA) comprise reactive arthritis, psoriatic arthritis (PsA), arthritis associated with inflammatory bowel disease and juvenile idiopathic arthritis (JIA), ankylosing spondylitis (AS) (5,6). AAU is both the most common extra-articular manifestation in SpA patients and the most frequent type of uveitis (1,5,7,8).

As in 2.8% cases AAU leads to blindness, eyes examination in SpA patients could be important in preventing severe AAU complications (9,10).

Aim of the study

To characterize clinical features and quality of life in patients with acute anterior uveitis (AAU) associated with seronegative spondyloarthropathies (SpA).

Material and Methods

68 SpA patients with and without AAU were included in the prospective clinical study that was performed at the Department of Ophthalmology, Hospital of Lithuanian University of Health Sciences, Kaunas Clinics. The research was approved by the local Research Ethics Committee and followed the tenets of the Declaration of Helsinki. Informed consent was obtained from all subjects before examination.

Patients were divided into two groups: 49 SpA patients with AAU and 19 without AAU. The patients' medical files were reviewed to obtain data on demographic characteristics.

A complete ophthalmological examination was performed. Anterior chamber cellular reaction was measured according to

Standardized Grading Scales for Uveitis (SUN criteria).

Grading of lens opacities and type were performed using Lens Opacities Classification System III (LOCS III). Lenses were graded for the three major types of cataract - nuclear, cortical, and posterior subcapsular, with higher scores indicating increase in cataract severity. Intraocular pressure (IOP) was measured using Goldmann applanation tonometer. Increased IOP was considered greater than 21 mmHg. Macula thickness was evaluated using optical coherence tomography (OCT, NIDEK RS 3000) in the central region. HLA-B27 allele typing was carried out in all patients by a standard genotyping of DNA extracted from peripheral blood.

Subjects were examined with self-administered visual function index (VF-14) designed to measure visual functional impairment. A score of 100 indicates able to do all applicable activities, a score of 0 - unable to do activities because of vision.

Statistical analysis was performed using IBM SPSS Statistics 23.0. For comparisons between nominal data the chi-square and Fischer's tests were used. Numeric data distribution was estimated by the Kolmogorov-Smirnov test. For comparisons between numeric data Mann Whitney U and Student's tests were used. All parametric data were expressed as mean and standard deviation (M (SD)). The level of significance was $p < 0.05$.

Results

68 cases of SpA were included, in 72.1% (n=49 patients with recent SpA) diagnosed AAU. The mean age was 41.31 (13.02) years, 35 (51.5%) patients were male (43.46 (11.72) years) and 33 (48.5%) were female (39.03 (14.10) years), $p > 0.05$. SpA subtypes included AS in 34 (69.4%), undifferentiated SpA in 12 (24.5%), PsA in 2 (4.1%) and 1 (2%) patient with JIA. For 13 (26.5%) patients first SpA manifestation was AAU. 29 (59.2%) patients had one AAU episode per year. VF-14 scores difference was observed between patients with one AAU episode (92.69 (11.33)) and patients with 2 or more episodes per year (83.93 (16.32) scores), $p = 0.006$. 54 (79.4%) patients were HLA-B27 positive.

BCVA in uveitic eyes increased after treatment compared to onset of AAU (from 0.46 (0.35) to 0.74 (0.31)), $p=0.001$. The macula in central region was thicker in the uveitic eyes (279.31 (53.64) μm) compared to the fellow eyes (261.52 (43.714) μm), $p=0.015$. IOP in uveitic eyes were 15.88 (6.14) mmHg and in the fellow eyes - 14.76 (3.24) mmHg, $p>0.05$.

In all uveitic eyes anterior chamber flare was diagnosed, mean anterior chamber cellular reaction was +2.04 (1.30), (16-25 cells). Complications of AAU included 25 (51.0%) cases of cataract, 7 (14.3%) - ocular hypertension and 8 (16.3%) - cystoid macular edema (CME).

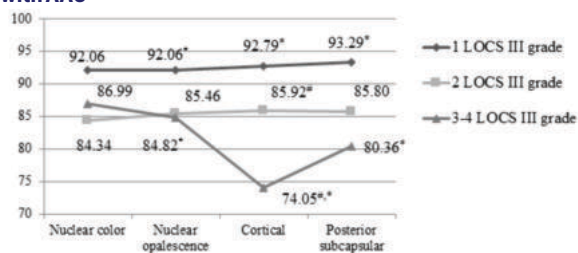
In our study, more patients without AAU were treated with systemic methotrexate (MTX), $p<0.05$. Nonsteroidal anti-inflammatory drugs were prescribed more frequent for AAU patients, $p<0.05$. Table 1 shows the systemic SpA treatment between the groups.

VF-14 scores ranged from 37.5 to 100, mean - 89.29 (14.51). Significant VF-14 differences were found according to LOCS III grades. The results are shown in Figure 1.

Table 1. Systemic treatment for SpA patients with and without AAU

	With AAU N=49	Without AAU N=19	P
Nonsteroidal anti-inflammatory drugs	89.80%	68.42%	0.031
5-aminosalicylic-acid derivative drugs (Sulfasalazine)	26.53%	26.32%	0.985
Glucocorticoids	24.49%	21.05%	0.764
Antimetabolite immunosuppressant drugs (Methotrexate)	18.37%	42.11%	0.042
Anti-tumor necrosis factor drugs	10.20%	10.53%	0.968

Figure 1. VF-14 scores according to LOCS III grade for patients with AAU



Discussion

AAU may be the most common ocular manifestation and first clinical sign in patients affected by SpA. Ji SX et al. (11) detected the HLA-B27 antigen in 82.5% patients, which is similar to our findings (79.4%).

Likewise, SpA typically affects young people, the average age in our study was 41.31 (13.02) years. This is similar to Ji SX et al. results (35 (12) years) (11). As AAU tends to affect the young adults, it is important to diagnose it on time and to prescribe appropriate treatment to prevent blindness.

In literature reports near half of AAU is recurrent (1,12). We found similar data - 40.8% of AAU cases have recurred.

Men are affected more often than women - 51.5 % male were in this study. Females seem to have a higher prevalence of uveitis in the general population (13) although SpA is more frequent among males, explaining AAU incidence, not prevalence(14).

Most cases respond well to topical corticosteroids and

noncorticosteroid drugs and the prognosis is usually good(5,15,16). In our study similar to literature data all patients were treated with a combination of topical corticosteroids and mydriasis agents (17), uveitis was well controlled in all patients. Analyzing systemic treatment, we found similar to Gehlen et al. results - significantly more patients without AAU were treated with MTX. This tendency is explained by Munoz-Fernandez et al. report that MTX could prevent recurrences of AAU (18,19). On the other hand, patients with AAU received less MTX because most of them were AS patients and the value of this medication in cases of AS has no clear effect on patients with domination of axial involvement(18,19).

In Gardiner et al. study found that visual function statistically significantly correlated with vision quality of life (20). We also found significant VF-14 scores connection with lens opalescence and color according to LOCS III classification.

Some limitations of our study need to be considered. First, the sample size influenced the power to detect accurate differences between the groups. Second, in addition to the relatively small size, all the subjects came from Caucasian population. The results of this study need to be confirmed using large sample sizes and multi-ethnic populations to clarify our findings.

Conclusions

1. The most common SpA subtype was AS.
2. Uveitic eyes had significantly thicker maculae than control eyes.
3. Significantly more patients were treated with systemic MTX in group without AAU.
4. VF-14 scores were significantly lower for patients with higher LOCS III grade and recurrent AAU.

Statement of Conflict of Interest

The authors state no conflict of interest.

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