Treatment of Spondyloarthropathy in Family Medicine's Ambulance

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Abstract: Joint pain is one of the most frequent indications to visit a family practitioner. Standard therapy using analgesics is not always successful in alleviating the pain. Physical exam and readily available laboratory tests can be helpful in reaching the etiological diagnosis and improve the outcome in these patients. Among 342 patients who suffered from joint pains, in 279 (81.6%) asymptomatic urinary tract infection was disclosed and treatment by antibiotics has revealed or significantly approved joint pain. In 63 (18.4%) patients, inflammation was found in other places, such as sinusitis, dental area, cholecystitis, colitis, etc. Patients with unexplained joint pains should be evaluated for presence of underlying infection that can cause reactive arthritis.

Key words: Reactive arthritis, urinary tract infections, spondyloarthropathy.

1. Introduction

Joint pain is the fourth most common complaint in the family medicine practice [1]. Since the problem itself is not usually death threatening, the cause of joint pain is often not properly evaluated and etiology is overlooked. Standard symptomatic therapy includes pain killers, non steroid anti-inflammatory drugs and corticosteroids drugs. However, presence persistent joint pain associated with other classic signs of inflammation (swelling, redness, and warmth) is further evaluated by imaging including joint radiographs (X-rays), computerized tomography (CT) or magnetic resonance imaging (MRI), and multidisciplinary assessment, including neurology, orthopedics, physical medicine and rehabilitation and rheumatologist.

2. Materials and Methods

In the periods of three year, among 342 patients who suffered from joint pains, 279 (81.6%) patients with joint pains were disclosed asymptomatic urinary tract infection. Types of joint involvement are presented in Fig. 1. The gender structure showed that females were

more commonly affected (Fig. 2).

Diagnostic methods included: detailed medical history, review of systems, full physical exam, standard blood and simple urine tests. The ordinary laboratory tests usually showed increased: sedimentation, c-reactive protein (CRP), fibrinogen and most frequently: leukocyturia and bacteriuria in urine's sediment. Rheuma tests were all negative.

Patients who were suffering from joint pain did not report urinary tract symptoms but they recognized slightly presence of urinary tract disturbances as: pain and burning during urination, frequent urination during night or sense of residual urine (particularly present by men) when their urinalysis showed presence of leucocyturia and bacteriuria. In these patients, joint discomfort resulted in significant morbidity including disturbed sleep, limited everyday activities, even absence from work with significant impact on their incomes and career.

Therapy by antibiotics had been given if urine culture was positive. If the joint pain did not disappear or diminished after the antibiotic treatment of urinary tract infection, other more expensive diagnostic methods had been taken, such as orthopedic, neurologic, rheumatologic, physical medicine and rehabilitation, or

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Fig. 1 Types of joint involvement.

Fig. 2 Gender structure.

Fig. 3 Patients outcome.

X-ray, CT, MRI, etc.

3. Results

From 279 followed patients who were treated for disclosed asymptomatic urinary tract infection, 57 (20.43%) patients didn't come for follow up. It could be concerned as they didn't need to come because of

improved symptoms, but they had not been accounted in this report. 222 (79.57%) patients came with control tests. The patients outcomes are presented in Fig. 3.

The treatment outcomes of therapy are presented in Fig. 4 and Table 1. The results were divided in four stages, according to residual joint pain.

Fig. 4 Outcomes of therapy.

Table 1 Outcome of residual pain.

Stages	Patients number
1. stage: the pain remained patients.	2 patients (1.18%)
2. stage: the pains diminished significantly, but not at all and the patient had to take pain killers from time to time, rarely.	38 patients (22.50%)
3. stage: The pains have quite diminished. The patient didn't need to take pain killers.	77 patients (45.56%)
4. stage: The patient have no pain at all.	52 patients (30.76%)

4. Conclusions

As the fourth common complaint in family medicine ambulance joint pains are the object of particular attention [1]. Among 342 patients who suffered from joint pains in 279 (81.6%) patients were disclosed urinary tract infections. Rheumatologic tests and expensive imaging were mostly negative. After the treatment of urinary tract infection, only 2 (1.18%) patients did not have any benefit (1. stage). The pains significantly diminished in 115 (68.06%) patients (2. and 3. stage) and completely in 52 (30.76%) patients (4. stage). After the treatment of urinary tract infection 129 (76.32%) patients didn't need to take pain killers more (3. and 4. stage). Patients with recurrent pains always had the evidence of urine tract infection or sometimes, but rare the infection in some other organic system [2] as indication that joint pains was consequence of reactive arthritis.

These symptoms of inflammation cannot be caused directly by microbes or viruses, because the joint is not directly vascularised. The all transfer between joint and blood is done by physiological diffusion through

synovial membrane and synovial liquid [2]. The joint's motion work as the pump which accelerate the nature process of diffusion, based on the presser's differences between synovial liquid and extracellular liquid presser. Microbes and viruses cannot pass the synovial membrane except if it is injured [3].

Reactive arthritis is acute, seronegative, sterile spondyloarthropathy caused by inflammation focus somewhere in the body far from targeted joint [4-6]. Reactive arthritis is consequence of autoimmune reaction of human's immune system on the presence of infective agents in any other organic system out of skeleton system. Spondyloarthropathy usually appeared 1-6 weeks after initial primoinfection in some organic system in a body. Initial primoinfection is obviously genitourinary system, although the other organic systems could be injured (digestive, respiratory system, dental, etc.) [4-6].

Pathophysiological mechanism is not clear at all, but some facts are determinate. At least 75% (according to some authors 80%-90%) targeted patients have antigen of tissue compatibility HLA-B27. Microbes have an important role in development of less tolerance of

human immune system to self antigens. Microbes make some homology with the human proteins which has the consequence that human proteins become epitope in tissue, the place in tissue which T-cells recognize as the place targeted by microbes as "enemy". The sequences of human proteins and pathogen proteins reveal many potential T-cell epitopes that could provide such mimics. The joint membrane is in this case the epitope for activated T-cells, the place where the inflammation has been developed [4-7].

It means: T-cells defend human body of "stranger's" pathogen proteins and at the same time damage the human tissue because they do not distinguish the human proteins from "strange" microbes proteins. The homology of the human proteins and microbes proteins which cause the T-cell activation in order to defend the human tissue is called "molecular mimicry" [4-6]. After first T-cell activation, appear "helper T-cells", which variety killers T-cells (cytotoxic T-cells), act against strange antigens only if they are in complex with strong antigen of tissue compatibility (HLA-B27) and struggling against strange antigen, they cause the inflammations with all inflammation's mediators. That inflammation causes the host's tissue

destructions. When the joint is epitope in that process, the inflammation has to be done in joint's tissue [4-7]. After recovering the urinary tract infection, the symptoms of inflammation and the pain diminished in targeted joint (Fig. 4 and Table 1).

References

- [1] Annual Report of Incidence of Morbidity in Family Medicine Ambulance Jan-Dec 2011 in Health Center "Novo Sarajevo", December 2011.
- [2] Batinic-Jojic, S. 2012. "Ethiopathogenetic View of Diagnostic and Therapeutic Treatment of Spondyloarthropathy in Family Medicine Ambulance." Presented on XIX Congress of Family medicine, Dubrovnik, Croatia, 27-31.
- [3] Stefanovic, S. 1978. "Special Clinical Physiology." *Beograd-Zagreb Medical Book Beograd-Zagreb*, 703-7. (in Croatian)
- [4] Vrhovac, B., Bakran, I., Granic, M., Jaksic, B., Labar, B., Vuce-lic, B. 1997. *Internal Medicine, Second Edition, Zagreb. "Forward"*, 1460-7, 1472-14. (in Croatian)
- [5] Peter, P. 2009. *The Immune System*, Third Edition. London and New York, Garland Science Taylor & Frances Group, LLC. 404-5, 427-30.
- [6] Andreis, I., Batinic, D., Culo, F., Grcevic, D., Marusic, M., Taradi, M., and Višnjić, D. 2004. *Immunology Zagreb "Medical Edition"*. 115-8, 146-8, 183, 291-4.
- [7] Snyderman, R. 1986. "Mechanisms of Inflammation and Leukocyte Chemotaxis in the Rheumatic Diseases." *Med. Clin. North. Am.* 70 (2): 217-35.