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Neurological symptoms in psoriasis patients under treatment with infliximab

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ABSTRACT

Objective: To study the neurological symptoms of psoriasis patients who used infliximab.
Methods: We studied psoriasis patients who used infliximab in two referral general hospitals in Tehran from January 2013 to January 2014. We completed neurological symptoms checklists by questioning the patients.
Results: Sixty patients with psoriasis were included in this study. Among them, 3 patients had sensory symptoms as side effect and one patient showed motor symptoms as side effect. There was no statistically significant difference between age, gender, and session count with the sensory and motor side effects ($P > 0.05$).
Conclusions: Neurological symptoms can be detected among 6% of patients under treatment with infliximab and there is no significant association between symptoms and gender, duration of drug use as well as age.

1. Introduction

Psoriasis is a chronic inflammatory skin disease seriously affecting the quality of life. Psoriasis is seen in 3% of population worldwide. It is characterized with abnormal differentiation and hyper-proliferation of keratinocytes [1]. The inflammatory process in psoriasis is related to function of T lymphocytes in dermal and epidermal layers. The predominant activity for T helper-1 is releasing the tumor necrosis factor (TNF)-alpha, interleukin-6, and interleukin-8 cytokines. The TNF-alpha is a pro-inflammatory mediator playing the major role in classic inflammation cascade [2].

Infliximab is a monoclonal immunoglobulin G binding exclusively to soluble and membranous TNF-alpha receptors and leading to formation of antigen-antibody complex and inhibition of TNF-alpha binding to receptors which would result in inhibition of TNF-alpha biological activity [3,4]. Accordingly, it would result in inhibition of exposure to pro-inflammatory stimuli leading to decreased cell proliferation, the main characteristic of psoriasis. Despite of the efficacies of infliximab, it may bring some drug adverse effects [5].

Infliximab is extensively utilized in treatment of psoriasis [6]. Some central nervous system demyelinization effects are reported in patients under treatment with infliximab [7]. Despite low rate of adverse neurological effects, it is necessary to be aware of them. Considering the importance of infliximab use in the treatment of psoriasis, increased use of this drug and also low rate of researches on neurological side effects, this study was performed to determine the neurological symptoms among psoriasis patients under treatment with infliximab.

2. Materials and methods

In this cross-sectional study, the understudy population included 60 psoriasis patients attending to dermatology clinics in two referral general hospitals from January 2013 to January 2014. A checklist including neurological symptoms was completed by patients in person or via phone call. The variables

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included age, duration of drug use, limb weakness or imbalance, wrist drop, ankle drop, claudicating gait, diplopia, visual loss, painful eye movement, swallow disorder, speech disorder, tingling, headache, seizure, nausea, and vomiting.

The data analysis was performed among 60 patients included by SPSS 20.0 software (Chicago, Illinois, USA). Independent-Sample-T and ANOVA tests were used and results were considered statistically significant at P values less than 0.05.

3. Results

In this study, 60 psoriasis patients including 21 women and 39 men were enrolled. The mean age was (37.70 ± 1.23) years ranging from 14 to 70 years. The patients were received the drug in a range from two to ten sessions and 53% were received three sessions.

The sensory side effects were seen in three patients including a 33-year-old male receiving three drug sessions (shown as anesthesia of inferior lip and mandibular teeth for ten days), a 39-year-old patient who was received eight drug sessions (experiencing tingling and anesthesia in palms and feet during the first 24 h with spontaneous improvement), and a 42-year-old woman using drug for three sessions (experiencing the side effects after one week with tingling and anesthesia in both feet and hands with spontaneous recovery), who decided to discontinue the treatment. The motor side effect was only seen in a 40-year-old man who was received six sessions of infliximab leading to transient stammering with spontaneous improvement and varied time interval between drug uses and stammering. The patients had no background disease and these symptoms were, for the first time, experienced by them. There was no statistically significant difference between age, gender, as well as session count and the sensory and motor side effects ($P > 0.05$).

4. Discussion

In this study, the patients were most men from the age 30–40 years and receiving three drug sessions. There has been increasing usage of infliximab in treatment of psoriasis in recent years and some researches however scarce, have shown some neurological adverse effects of infliximab [8]. Schnitzler *et al.* evaluated 614 patients with Crohn's disease under treatment of infliximab and found three cases with neurological side effects, compared with four out of sixty patients in our study [9].

The differences may be due to varied diseases in two studies despite of the same loading and maintenance doses in two studies including 5 mg/kg at base, the second and sixth weeks as loading doses, and a maintenance dose of 5 mg/kg with eight-week intervals. In some studies, neurological symptoms were also reported in patients with rheumatoid arthritis receiving infliximab of 3 mg/kg for loading and maintenance doses with same protocols. Another cause of difference between the results found in various studies is the technique used for recognition of neurological side effects. However, there was no study focusing only on the neurological symptoms. Also, there was no similar study only among the patients with psoriasis who were under treatment with infliximab. Cause of the neurological side effects is demyelinization but the exact mechanisms are not clear yet [10–12]. However, we only evaluated the symptoms without diagnostic assessment. In our study, there was no significant association between neurological symptoms and gender, duration of drug use as well as age. It may be due to small sample size and larger studies need to be performed.

Finally, according to the obtained results, it can be concluded that the neurological symptoms can be detected in 6% of psoriasis patients under treatment with infliximab and there is no statistically significant association between symptoms and gender, duration of drug use as well as age.

Conflict of interest statement

We declare that we have no conflict of interest.

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