Open Access Maced J Med Sci **electronic publication ahead of print,**
published on January 27, 2019 as https://doi.org/10.3889/oamjms.2019.063

ID Design Press, Skopje, Republic of Macedonia
Open Access Macedonian Journal of Medical Sciences.
Special Issue: Vietnamese Dermatology
https://doi.org/10.3889/oamjms.2019.063
eISSN: 1857-9655
Clinical Science

Effectiveness, Safety and Tolerance of Methotrexate in Vietnamese Psoriatic Arthritis Patients

Van Bui Thi[1], Vinh Ngo Minh[2], Anh Tran Ngoc[2], Quyet Tran Dang[3], Diep Le Ngoc[4], Em Dang Van[5], Thuong Nguyen Van[6], Phuong Pham Thi Minh[6], Hien Do Thi Thu[6], Nghi Dinh Huu[6], My Le Huyen[1], Khang Tran Hau[6], Marco Gandolfi[7*], Francesca Satolli[7], Claudio Feliciani[7], Michael Tirant[8,9], Aleksandra Vojvodic[10], Torello Lotti[8]

[1]Military Central Hospital, Hanoi City, Vietnam; [2]Pham Ngoc Thach University of Medicine, HCMC, Vietnam; [3]103 Military Hospital, Hanoi, Vietnam; [4]University of Medicine and Pharmacy, HCMC, Vietnam; [5]Institute of Clinical Medical & Pharmaceutical Sciences, Hanoi City, Vietnam; [6]National Hospital of Dermatology and Venereology, Hanoi, Vietnam; [7]Unit of Dermatology, University of Parma, Parma, Italy; [8]University of Rome G. Marconi, Rome, Italy; [9]Psoriasis Eczema Clinic, Melbourne, Australia; [10]Department of Dermatology and Venereology, Military Medical Academy of Belgrade, Belgrade, Serbia

Citation: Bui Thi V, Ngo Minh V, Tran Ngoc A, Tran Dang Q, Le Ngoc D, Dang Van E, Van TN, Thi Minh PP, Thi Thu HD, Dinh Huu N, Le Huyen M, Tran Hau K, Gandolfi M, Satolli F, Feliciani C, Tirant M, Vojvodic A, Lotti T. Effectiveness, Safety and Tolerance of Methotrexate in Vietnamese Psoriatic Arthritis Patients. Open Access Maced J Med Sci. https://doi.org/10.3889/oamjms.2019.063

Keywords: Psoriatic arthritis (PsA); Disease activity score (DAS)

***Correspondence:** Marco Gandolfi. Unit of Dermatology, University of Parma, Parma, Italy. E-mail: marco.gandolfi5@gmail.com

Received: 02-Jan-2019; **Revised:** 16-Jan-2019; **Accepted:** 17-Jan-2019; **Online first:** 27-Jan-2019

Funding: This research did not receive any financial support

Competing Interests: The authors have declared that no competing interests exist

Abstract

AIM: To access the effectiveness, safety and tolerance of methotrexate (MTX) in psoriatic arthritis (PsA) treatment.

METHODS: We recruit 37 patients, admitted at HCMC Hospital of Dermato-Venereology from 1/2016 to 3/2017, with MTX dosage ranging from 10 mg to 15 mg per week.

RESULTS: Skin lesion response after 12 weeks improved PASI 50: 40.5%, PASI 75: 24.3%. Disease activity score decreased after 12 weeks with ΔDAS28 = -1.43 + 0.79, 37.8% PsA achieved complete remission. Nausea and vomiting were 8.1%. These symptoms were mild and transient. We did not stop MTX usage. The rate of elevating SGPT 2-3 times as much as the upper limit of the normal range was 2.7%.

CONCLUSION: We finally demonstrated that the rate of treatment response in Vietnam is the same as demonstrated by foreign authors in other countries.

Introduction

The incidence rate of psoriatic arthritis is 6-42%. Among drugs treating psoriatic arthritis, methotrexate (MTX) is approved by the Food and Drug Administration (FDA) in psoriatic arthritis treatment. Although the efficacy of MTX is variable among researches, it is the drug recommended by European League against Rheumatism-EULAR for moderate and severe psoriatic arthritis treatment [1].

Methods

Because of the absence of research or summary report on MTX in the treatment of psoriatic arthritis in Vietnam, we recruited 37 psoriasis arthritis patients, Between January 2016 to March 2017, admitted to HCMC Hospital of Dermato-Venereology.

Results

Female made up the majority (67.57%), more than male. 15.6% of patients had the family history of psoriasis as shown in Table 1.

Table 1: Characteristic of samples

Characteristic	Distribution
Sex: n (%)	
Male	12(32.43)
Female	25(67.57)
Age: mean (SD), year	48(13)
Family history: n (%)	7(18.2)
PA duration: median, year	1(1-8)
Habit:	
Smoking: n (%)	3(8.11)
Drinking: n (%)	7(18.9)
Swollen joints: median	2(1-18)
Painful joints: median	1(1-14)
ESR. mm/h: median	50(14-158)
Pain, 100 mm VAS: median	30(10-80)
First sign:	
Skin psoriasis: n (%)	26(70.27)
Arthritis: n (%)	10(27,03)
Skin psoriasis and arthritis at the same time: n (%)	1(2.7)
Nail dystrophy: n (%)	31(83.78)
Joint deformity: n (%)	15(37)
Peripheral arthritis: n (%)	30(81.08)
Sacroiliitis: n (%)	2(5.41)
Spinal arthritis: n (%)	6(16.22)
Distal interphalangeal joint arthritis: n (%)	13(35.14)
HLA B27(+): n (%)	12(32.4)
HLA Cw06(+): n (%)	1(2.7)
HLA DR7(+): n (%)	12(32.4)

Most cases (70.27%) had skin psoriasis before arthritis. Joint deformity rate was high (37.0%). Peripheral arthritis rate was also significant (81.08%), and the next was distal interphalangeal joint arthritis (31.3%). Nail dystrophy was also familiar (83.78%). Positive HLA-B27 and HLA-DR7 percentage was 32.5% and 32.4% respectively while the positivity for HLA Cw06 in our research was 2.7%.

Every patient stopped therapy with NSAIDs (non-steroidal anti-inflammatory drugs) and with DMARD (disease-modifying antirheumatic drug) at least 2 weeks and 1 month before, respectively.

After 12 weeks treatment by MTX, at dosage 10-15mg PO q12hr for 3 sequential doses per week. 5 mg Folic acid was used 24 hours after taking MTX; skin lesions were improved. 40.5%, 24.3% and 37.8% achieved PASI 50, PASI 75 and PASI 90, respectively as shown in Table 2, in comparison with Laura's study in which 27.2% patients reached PASI 75 [2].

Table 2: Efficacy of MTX in the treatment of psoriasis

Treatment monitoring indexes	Before treatment		After 4 weeks		After 8 weeks		After 12 weeks	
	n	%	n	%	n	%	n	%
PASI								
PASI 50			4	10.8	10	27.0	15	40.5
PASI 75			1	2.7	5	13.5	9	24.3
PASI 90			0	0.0	4	10.8	6	16.2
DAS 28								
> 5.1	11	29.7	6	16.2	0		0	
From 3.2 to 5.1	20	54.1	20	54.1	21	56.8	16	43.2
From 2.6 to <	6*	16.2	4	10.8	6	16.2	7	18.9
5.1	0	0	7	18.9	10	27.0	14	37.8
< 2.6								
ΔDAS28				-1,4 ± 0,8				

(*) *Psoriatic arthritis with bad prognosis: ≥ 5 joints are affected, damage on X-ray, severe inflammatory reaction, injury beside joints, especially dactylitis.*

At week 8, 27% psoriatic arthritis patients achieved remission (Table 2), no severe arthritis patients left. After 12 weeks, 37.8% of patients reached alleviation, which is compatible with the study of Laura et al. in which 22.4% patients accomplished complete remission.

The side effects at week 12 were mostly nausea and vomiting (8.1%). Fatigue and alopecia had the same rate (2.7%). These side effects were transient, and there was no need for treatment. Other side effects noted were elevated SGPT (2.7%), hemoglobin decreased (2.7%), neutropenia (2.7%) (Table 3).

Table 3: The abnormality on subclinical tests

Side effects	n	%
Fatigue	1	2.7
Nausea/Vomiting	2	5.4
Alopecia	1	2.7
Fever/Chill	0	0
Pneumocitis	0	0
SGPT elevation		
1.5 – 2 ULR* (60 – 80 U/L)	2	5.4
>2 – 3 ULR* (81 – 120 U/L)	1	2.7
Hemoglobin decrement above 2 g/dL	1	2.7
White blood cells below the normal range (< 5.0 x10^9/L)	1	2.7
Neutrophils below the normal range (< 1,8 x 10^9/L)	1	2.7
Platelets below the normal range (< 140 x 10^3/L)	0	0

(*) ULR: The upper limit of the normal range.

Discussion

Female was twice as likely as a man to get psoriatic arthritis, which was higher than the result of Reich's study suggesting the proportion of males was 58% [3]. This difference may be the characteristic of psoriatic arthritis in Vietnam because psoriasis relates to genetic and races.

Joint deformity rate was also significant (37%) which was higher than the rate suggested in Moll and Wright research, 5% [4]. Nail dystrophy rate was 83.78% which was compatible with those of Scarpa, 63% [4] So patient with psoriasis vulgaris having nail change should be monitored to discover arthritis. The psoriatic arthritis duration was about 0.8 (0.1-2.9) year on median which is lower than the study of Gabrielle et al., (1-5) year on median) [5]. So most of our patients had suffered from prolonged arthritis before we did our research.

Based upon our and published experiences, MTX is effective and affordable in psoriatic arthritis, affecting both skin lesions and joint damage. The price is more affordable than many biologic agents [6], [7], [8], [9], [10], [11], [12].

We finally demonstrated that the rate of treatment response in Vietnam is the same as demonstrated by foreign authors in other countries.

References

1. Gossec L, Smolen JS, Ramiro S, De Wit M, Cutolo M, Dougados M, Emery P, Landewé R, Oliver S, Aletaha D, Betteridge N. European League Against Rheumatism (EULAR) recommendations for the management of psoriatic arthritis with pharmacological therapies: 2015 update. Annals of the rheumatic diseases. 2016; 75(3):499-510. https://doi.org/10.1136/annrheumdis-2015-208337 PMid:26644232

2. Coates LC, Helliwell PS. Methotrexate efficacy in the tight control in psoriatic arthritis study. The Journal of rheumatology. 2016; 43(2):356-61. https://doi.org/10.3899/jrheum.150614 PMid:26669913 PMCid:PMC4740927

3. Reich K, Krüger K, Mössner R, Augustin M. Epidemiology and clinical pattern of psoriatic arthritis in Germany: a prospective interdisciplinary epidemiological study of 1511 patients with plaque-type psoriasis. British Journal of Dermatology. 2009; 160(5):1040-7. https://doi.org/10.1111/j.1365-2133.2008.09023.x PMid:19210498

4. Moll JM. The clinical spectrum of psoriatic arthritis. Clinical orthopaedics and related research. 1979; (143):66-75. https://doi.org/10.1097/00003086-197909000-00010

5. Kingsley GH, Kowalczyk A, Taylor H, Ibrahim F, Packham JC, McHugh NJ, Mulherin DM, Kitas GD, Chakravarty K, Tom BD, O'keeffe AG. A randomized placebo-controlled trial of methotrexate in psoriatic arthritis. Rheumatology. 2012; 51(8):1368-77. https://doi.org/10.1093/rheumatology/kes001 PMid:22344575 PMCid:PMC3397466

6. Dabouz F, Khemis A, Barbe C, Lahfa M, Maccari F, Chaby G, Beneton N, Boye T, Esteve E, Mahé E, Begon E. Factors associated with successful switching between biologic therapies for the treatment of psoriasis in daily dermatological real-life practice: The Resoswitch study. Dermatologic therapy. 2018; 28:e12789.

7. Hội Da Liễu Việt Nam. Hướng dẫn chăm sóc và điều trị bệnh vảy nến, Nhà xuất bản Y học, Hà Nội, 2017.

8. Wollina U, Ständer K, Barta U. Toxicity of methotrexate treatment in psoriasis and psoriatic arthritis–short-and long-term toxicity in 104 patients. Clinical rheumatology. 2001; 20(6):406-10. https://doi.org/10.1007/s100670170004 PMid:11771523

9. Wollina U, França K, Lotti T, Tirant M. Adjuvant treatment of chronic plaque psoriasis in adults by a herbal combination: Open German trial and review of the literature. Dermatologic therapy. 2018 2:e12624. https://doi.org/10.1111/dth.12624 PMid:30175556

10. Damevska K, França K, Lotti T, Nikolovska S, Pollozhani N. Complementary and integrative therapies for psoriasis: Looking forward. Dermatologic therapy. 2018; 31(5):e12627. https://doi.org/10.1111/dth.12627 PMid:30133906

11. El-Gammal A, Nardo VD, Daaboul F, et al. Is There a Place for Local Natural Treatment of Psoriasis? Open Access Maced J Med Sci. 2018; 6(5):839-842. https://doi.org/10.3889/oamjms.2018.106

12. Fagerli KM, Lie E, van der Heijde D, Heiberg MS, Lexberg ÅS, Rødevand E, Kalstad S, Mikkelsen K, Kvien TK. The role of methotrexate co-medication in TNF-inhibitor treatment in patients with psoriatic arthritis: results from 440 patients included in the NOR-DMARD study. Annals of the rheumatic diseases. 2014; 73(1):132-7. https://doi.org/10.1136/annrheumdis-2012-202347 PMid:23291385