

ORIGINAL ARTICLE**Rheumatoid arthritis patients undergoing elective orthopedic procedures with or without methotrexate**

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ABSTRACT:

Background: Rheumatoid arthritis (RA) is a common and disabling condition that is now often treated by the cytotoxic drug methotrexate. The present study was conducted to compare Rheumatoid arthritis patients undergoing elective orthopedic procedures with or without methotrexate. **Materials & Methods:** 75 patients of Rheumatoid arthritis of both genders were divided into 3 groups of 25 each. Group I RA patients who had been on methotrexate for at least six weeks before to surgery and who had not stopped taking the medication. Patients with RA in Group II who were on methotrexate for a particular kind of surgery had their therapy discontinued two weeks prior to surgery and resumed two weeks following it. Patients with RA in Group III who had elective orthopaedic surgery during the research period but had not been treated with methotrexate. Complications were recorded. **Results:** Group I had 11 males and 14 females, group II had 15 males and 10 females and group III had 13 males and 12 females. Mean age was 51.2 years, 53.7 years and 52.6 years respectively. Disease duration was 19.2 years, 18.1 years and 18.4 years respectively. The baseline articular index was 14.5 years, 16.1 years and 15.6 years respectively. HAQ was 1.7, 1.7 and 1.6 years in group I, II and III respectively. The difference was non-significant ($P > 0.05$). Surgical procedures were performed in shoulder 5 in group I, 7 in group II and 6 in group III, wrist in 7, 4 and 5 in group I, II and III respectively, elbow in 7, 6 and 7 in group I, II and III respectively, hip in 3, 5 and 4 in group I, II and III respectively and ankle in 3, 4 and 3 in group I, II and III respectively. The common complication was rubor seen in 1, 2 and 4, discharge seen 2 in group III, 3 in group II and 3 patients in group III and dehiscence seen 1, 2 and 5 patients in group I, II and III respectively. The difference was significant ($P < 0.05$). **Conclusion:** Patients with RA who continue using methotrexate do not have an increased risk of infections or surgical complications.

Keywords: articular index, Rheumatoid arthritis, Methotrexate

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This article may be cited as: Yadav DP. Rheumatoid arthritis patients undergoing elective orthopedic procedures with or without methotrexate. *J Adv Med Dent Scie Res* 2014;2(3):423-426.

INTRODUCTION

Rheumatoid arthritis (RA) is a common and disabling condition that is now often treated by the cytotoxic drug methotrexate. Once the inflammation of rheumatoid disease is controlled by methotrexate, if the drug is suddenly stopped the rheumatoid disease often flares, thus making movement painful and rehabilitation and mobilisation after any surgical procedure more difficult.¹

A prevalent and incapacitating ailment, rheumatoid arthritis (RA) is now frequently treated with the cytotoxic medication methotrexate. When methotrexate is used to reduce rheumatoid arthritis inflammation, the condition frequently flares up if the medication is abruptly stopped. This makes movement unpleasant and makes recovery and mobilization following surgery more challenging. The general function and quality of life of RA patients have been significantly enhanced by orthopaedic operations.² Post-operative surgical site infections (SSIs) in particular present significant functional and psychological challenges during the course of RA treatment. Infectious disease risk is typically higher in this group of RA patients than in the overall population.³ As a result, even if the statistics are conflicting and these rare side effects of joint surgery

only affect a tiny portion of patients, the infection rate following surgery in RA patients may be even greater. One of the most effective surgical treatments for RA that lessens pain and improves physical function is total joint replacement, which is a routine surgery.⁴

Prospective studies subsequently compared the risk of postoperative surgical complications in a further 313 procedures in patients with RA who received methotrexate treatment within four weeks of elective orthopaedic surgery and 176 patients with RA who did not receive methotrexate within four weeks of surgery. 22 of 332 (7%) procedures in subjects who continued methotrexate developed early postoperative complications, compared with 10 of 210 (5%) procedures on patients with RA who did not receive methotrexate treatment before surgery—that is, the overall results showed a trend for an increased risk of early postoperative surgical complications in subjects who continued methotrexate before surgery.⁵ The present study was conducted to compare Rheumatoid arthritis patients undergoing elective orthopedic procedures with or without methotrexate.

MATERIALS & METHODS

The present study was carried out on 75 patients of Rheumatoid arthritis of both genders. All patients

were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Patients were divided into 3 groups of 25 each. Group I RA patients who had been on methotrexate for at least six weeks before to surgery and who had not stopped taking the medication. Patients with RA in Group II who were on methotrexate for a particular kind of surgery had their therapy discontinued two weeks prior to surgery and resumed two weeks following it. Patients with RA in Group III who had

elective orthopaedic surgery during the research period but had not been treated with methotrexate. Any complications that occurred within a year following surgery and necessitated a secondary revision procedure were noted, including reddening of the wound, drainage from the wound, systemic infection, wound dehiscence, loosening of implants, and any other complications. Results were analysed statistically. P value less than 0.05 was considered significant.

RESULTS

Table I Assessment of parameters

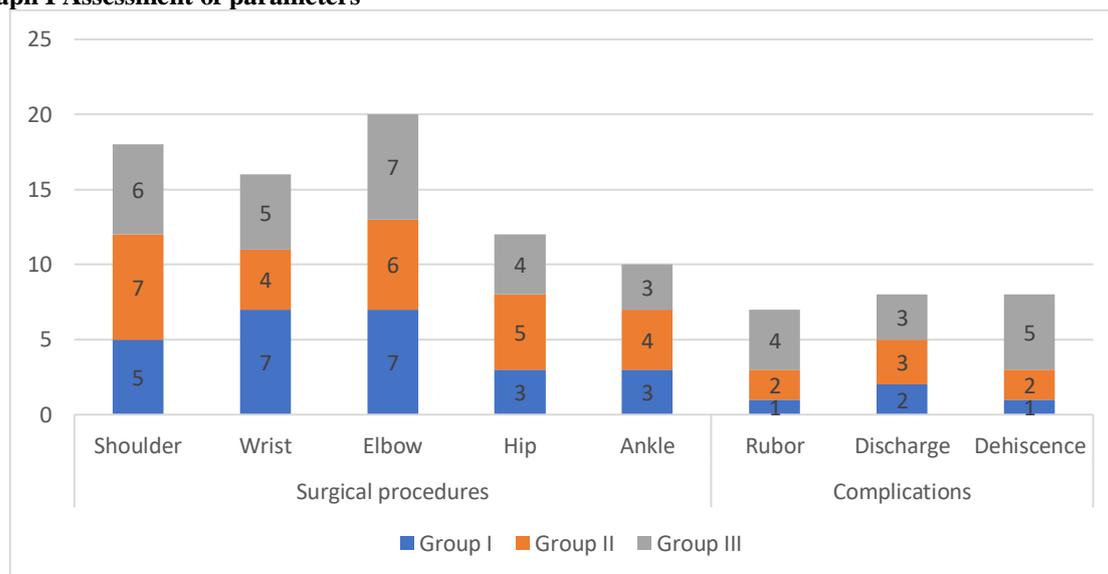
Parameters	Group I	Group II	Group III	P value
M:F	11:14	15:10	13:12	0.72
Mean age (years)	51.2	53.7	52.6	0.65
Disease duration (years)	19.2	18.1	18.4	0.21
Baseline articular index	14.5	16.1	15.6	0.48
HAQ	1.7	1.7	1.6	0.91

Table I shows that group I had 11 males and 14 females, group II had 15 males and 10 females and group III had 13 males and 12 females. Mean age was 51.2 years, 53.7 years and 52.6 years respectively. Disease duration was 19.2 years, 18.1 years and 18.4 years respectively. The baseline articular index was 14.5 years, 16.1 years and 15.6 years respectively. HAQ was 1.7, 1.7 and 1.6 years in group I, II and III respectively. The difference was non-significant ($P > 0.05$).

Table II Assessment of parameters

Parameters	Variables	Group I	Group II	Group III	P value
Surgical procedures	Shoulder	5	7	6	0.19
	Wrist	7	4	5	
	Elbow	7	6	7	
	Hip	3	5	4	
	Ankle	3	4	3	
Complications	Rubor	1	2	4	0.05
	Discharge	2	3	3	
	Dehiscence	1	2	5	

Table II, graph I shows that surgical procedures were performed in shoulder 5 in group I, 7 in group II and 6 in group III, wrist in 7, 4 and 5 in group I, II and III respectively, elbow in 7, 6 and 7 in group I, II and III respectively, hip in 3, 5 and 4 in group I, II and III respectively and ankle in 3, 4 and 3 in group I, II and III respectively. The common complication was rubor seen in 1, 2 and 4, discharge seen 2 in group III, 3 in group II and 3 patients in group III and dehiscence seen 1, 2 and 5 patients in group I, II and III respectively. The difference was significant ($P < 0.05$).

Graph I Assessment of parameters

DISCUSSION

Methotrexate is used to treat rheumatoid arthritis, a debilitating inflammatory disease, while several additional medications are now utilized either in addition to or instead of methotrexate.⁶ According to certain research, continuing methotrexate throughout the intraoperative phase can result in difficulties, such as infection.⁷ This conclusion was supported by more prospective and retrospective research. As a result of these research, methotrexate is now stopped weeks before surgery and resumed following surgery. Regrettably, following surgery, this made the rheumatoid symptoms worse.⁸ The present study was conducted to compare Rheumatoid arthritis patients undergoing elective orthopedic procedures with or without methotrexate.

We observed that group I had 11 males and 14 females, group II had 15 males and 10 females and group III had 13 males and 12 females. Mean age was 51.2 years, 53.7 years and 52.6 years respectively. Disease duration was 19.2 years, 18.1 years and 18.4 years respectively. The baseline articular index was 14.5 years, 16.1 years and 15.6 years respectively. HAQ was 1.7, 1.7 and 1.6 years in group I, II and III respectively. A prospective randomized investigation of surgical complications or postoperative infection within a year of surgery was carried out by Grenan et al⁹ in patients with RA who had elective orthopaedic surgery. There were 388 RA patients scheduled for elective orthopedic surgery. Groups of patients on methotrexate were assigned at random to either continue taking the medication (group A) or stop taking it from two weeks before to surgery until two weeks following surgery (group B). Their rates of problems were contrasted with those of 228 RA patients (group C) who also had elective orthopaedic surgery and were not on methotrexate. Infection or surgical complications were observed in two out of 88 procedures in group A (2%), 11 out of 72 procedures in group B (15%), and 24 out of 228 procedures in

group C (10.5%). Postoperative infection symptoms included rubor, discharge, systemic infection, and frequency of wound dehiscence, as well as the incidence of any surgical complication requiring a secondary revision procedure that occurred within a year of surgery. The frequencies of flare-up activity of RA at six weeks and six months after surgery were also documented.

We observed that surgical procedures were performed in shoulder 5 in group I, 7 in group II and 6 in group III, wrist in 7, 4 and 5 in group I, II and III respectively, elbow in 7, 6 and 7 in group I, II and III respectively, hip in 3, 5 and 4 in group I, II and III respectively and ankle in 3, 4 and 3 in group I, II and III respectively. The common complication was rubor seen in 1, 2 and 4, discharge seen 2 in group III, 3 in group II and 3 patients in group III and dehiscence seen 1, 2 and 5 patients in group I, II and III respectively. A controlled study of problems following elective surgery in individuals with rheumatoid arthritis (RA) who either continued or stopped taking methotrexate before surgery was conducted by Sreekumar et al.¹⁰ This study demonstrated that individuals with RA who continued their methotrexate treatment before orthopaedic surgery did not have a higher chance of infection or surgical complications within a year following surgery. Thirty-one got a thorough evaluation in the clinic, and thirty-four participated in a structured phone interview. There is no proof that ongoing methotrexate treatment during the perioperative phase raises the risk of late deep infections because there were no cases of deep bone infection in any patient group. Group A experienced fewer surgical complications or infections than either group B ($p < 0.003$) or group C ($p = 0.026$). Six weeks following surgery, group A experienced no flares, group B experienced six flares (8%), and group C experienced six flares (2.6%). Methotrexate, whether continued or stopped before to surgery, did not raise the early

complication rate in RA patients undergoing elective orthopaedic surgery, according to a logistic regression analysis of the total surgical complication rate in all RA patients investigated.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that patients with RA who continue using methotrexate do not have an increased risk of infections or surgical complications.

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