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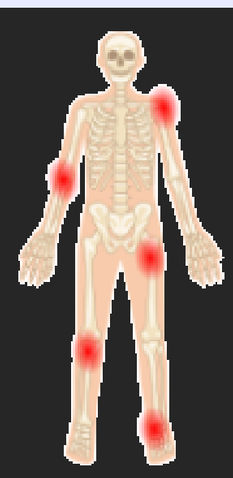
EFFECTIVENESS AND SAFETY OF METHOTREXATE TRIPLE VS DOUBLE THERAPY IN RHEUMATOID ARTHRITIS TREATMENT: A RETROSPECTIVE COMPARISON



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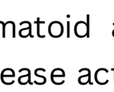
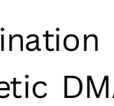
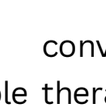
INTRODUCTION

- Effective management of rheumatoid arthritis (RA) targets remission or low disease activity to prevent joint damage and improve quality of life.
- Combination therapy with conventional synthetic DMARDs, such as triple therapy with Methotrexate (MTX), Hydroxychloroquine (HCQ), and Sulfasalazine (SSZ), or double therapy with Methotrexate (MTX) and Leflunomide (LEF), has shown comparable effectiveness [1,2].

OBJECTIVE

To compare the treatment effectiveness and safety profiles of triple combination therapy (MTX, HCQ, and SSZ) versus double combination therapy (MTX and LEF) in the treatment of RA.

METHODOLOGY

Sample Size  n= 123 in each group	**Study Design**  Retrospective Cohort
Sampling Method  Convenient Sampling	**Study Duration**  Jan 2013- Dec 2023

RESULT

Table 1. Baseline demographic

Characteristics	Triple regimen (N=123)	Double regime (N=123)	P value
Age			
Mean Age, y (SD)	52.34 (12.70)	50.07 (11.50)	0.144[a]
Gender n (%)			0.010[b]*
Female	115 (93.5)	102 (82.9)	
Male	8 (6.5)	21 (17.1)	
Comorbidities n(%)			0.041[b]*
Yes	91 (74.0)	76 (61.8)	
No	32 (26.0)	47 (38.2)	
Rheumatoid factor n(%)			0.218[b]
Negative	35 (28.4)	42 (33.3)	
Positive	88 (71.6)	81 (66.7)	
DAS28-ESR			0.052[b]
Mean score, (SD)	4.32 (0.95)	4.63 (0.99)	0.014[a]*
Disease duration			
Median year, y(IQR)[d]	4 (7)	3 (4)	0.298[c]

[a] Independent t-test, [b]Chi-square test , [e]Mann Whitney test,
* p -value < 0.05 is considered significant

Objective 1: Effectiveness of Triple vs. Double Combination Therapy in RA Treatment

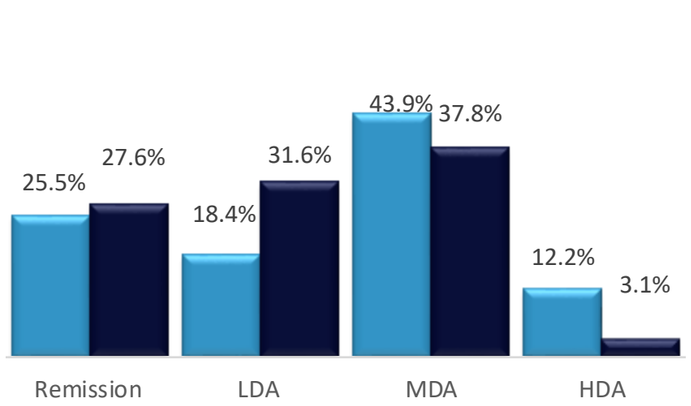


Figure 1: Compared treatment effectiveness double vs triple combination at 6th month

Low disease activity (LDA) was significantly **higher** with **triple combination** (31.6%) vs. double combination (18.4%) (OR 2.06; 95% CI 1.08–4.00; p=0.032).

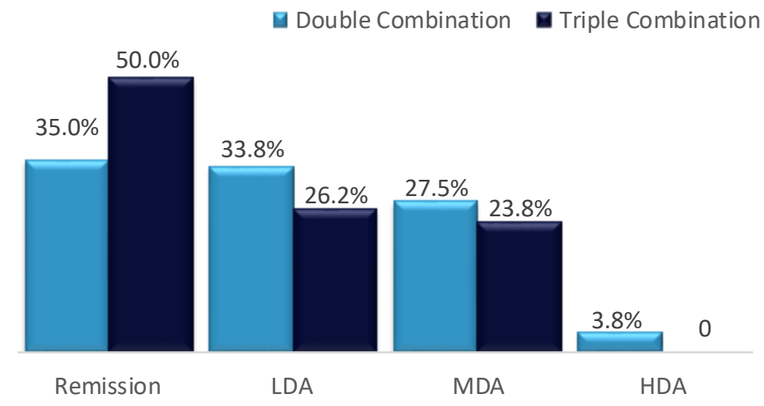


Figure 2: Compared treatment effectiveness double vs triple combination at 12th month

Remission was significantly **higher** with **triple combination** (50%) vs. double combination (35%) (OR 1.95, 95% CI 1.04–3.65; p=0.036).

Objective 2: Safety of Triple vs. Double Combination Therapy in RA Treatment

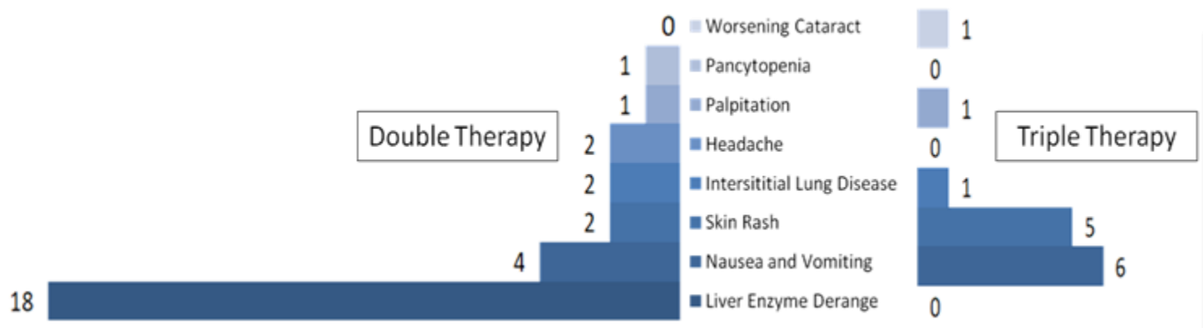


Figure 3: Side effects causing treatment discontinuation in triple vs. double therapy

Treatment discontinuation was mainly due to liver enzyme derangement in double therapy and gastrointestinal issues in triple therapy.

Objective 3: Factors Associated with Treatment Effectiveness

Table2. Multivariate logistic regression model predicting remission to triple and double combination treatment.

Variable, n = 164 Patients' demographic	Multivariable Analyses Adjusted OR	95% C.I	P value
Comorbid			
No			
Yes	2.69	1.21-5.95	0.015*
Treatment regime			
Double therapy			
Triple therapy	2.34	1.11-4.96	0.026*
Anti-CCP			
Negative			
Positive	1.14	0.51-2.55	0.747
Rheumatoid factor			
Negative			
Positive	0.52	0.22-1.24	0.141

- Triple therapy had twice the odds of remission compared to double therapy (Adjusted OR: 2.34; 95% CI: 1.11–4.96; p=0.026).
- Remission was higher in patients with comorbidities. (Adjusted OR: 2.69; 95% CI: 1.21–5.95; p=0.015).

DISCUSSION

In our study, majority were females under 65 and over half were overweight/obese.
- Obesity increases RA risk in younger women.[3,4]

Baseline DAS28-ESR means differed, but both indicated moderate disease activity (MDA).

At 6th month,
- Triple combination was over twice as likely to achieve LDA compared to double combination (31.6% vs 18.4%), which was comparable with Heimans et al. (2014). [5]
- Double combination outcomes were comparable to Wijesinghe et al. (2017), with 26% remission at 6th month.[6]

At 12th month, remission significantly increased in the triple combination.
- This aligns with studies by Moreland et al. (2012) and O'Dell at al. (2013).[7,8]

Double combination had prior DMARD failure, indicating more treatment-resistant RA.
- Early, aggressive treatment strategies may be more effective. [9]

Double combination had more liver enzyme elevation[6]; triple combination was more associated with GI issues from SSZ and MTX. [5,7]

Anti-CCP and RF are useful for RA diagnosis and prognosis but not reliable predictors of treatment response.[10]

CONCLUSION

- The triple combination was more effective than the double combination in achieving low disease activity at 6 months and remission at 12 months.
- The double combination was associated with a higher incidence of liver enzyme derangement.

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