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ORIGINAL ARTICLE

Opting Biological and Targeted Synthetic Disease-modifying Antirheumatic drugs: Willingness to Pay, Perceptions and barriers among Pakistani Rheumatoid Arthritis Patients

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ABSTRACT

Background: Biological and targeted synthetic disease-modifying antirheumatic drugs (b/tsDMARDs) have revolutionized the treatment of rheumatoid arthritis (RA). These novel agents have costs, perceptions, barriers and misconceptions.
Objective: To determine the factors associated with limited use of b/tsDMARDs among RA patients.
Study design: Analytical cross-sectional study.
Place and duration of study: Gulab Devi Teaching Hospital, Lahore and Gujranwala Medical College Teaching Hospital, Gujranwala from 1st January 2023 to 30th June 2023.
Methodology: One hundred and sixteen patients with rheumatoid arthritis and willingness to pay to pay, perceptions regarding b/tsDMARDs and barriers rendering suboptimal use of standard treatment were included.
Results: Fifty (45%) patients preferred biological and targeted synthetic disease-modifying antirheumatic drugs. Regarding perceptions and challenges, we found that patients prefer two to three tablets (56%) instead of injection-based therapy. 27% patients among sampled population perceived that injection being the last treatment should be avoided. 13% patients had needle phobia. 14% patients were willing to pay for b/tsDMARDs while 86% patients were not willing to pay because of financial constraints,
Conclusion: Financial constraints are the major barrier to optimal utilization of the newer biological and targeted synthetic disease-modifying antirheumatic drugs among Pakistani patients with rheumatoid arthritis.
Keywords: Conventional versus non-conventional DMARDs, Arthritis.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic autoimmune disease marked with disability and deformities compromising quality of life.[1,2] Over the last two decades, advancements in the management of RA have revolutionized patient care, particularly with the advent of biological and targeted synthetic disease-modifying antirheumatic drugs (b/tsDMARDs).[3,4] These therapies offer improved disease control, reduced disability, and enhanced quality of life, especially for patients who fail to respond adequately to conventional DMARDs (cDMARDs).[5] Achieving disease remission or low disease activity has become a primary goal in RA management, guided by international recommendations such as those from the American College of Rheumatology (ACR) and the European Alliance of Associations for Rheumatology (EULAR).[6]

Biological and targeted synthetic disease-modifying antirheumatic drugs are costly and require regular follow up and investigations increasing the toll of cost on patients.[7] However, implementing these therapies presents significant challenges in resource-limited settings like Pakistan. In developing countries where out of pocket payment is major modality and the patients pay solely for their treatment expanses.[8-12]

Financial constraints, accessibility barriers, and lack of awareness among patients contribute to suboptimal utilization of advanced therapies. Rheumatologists also face challenges in treatment decision-making, influenced by patient preferences, comorbidities, and local healthcare limitations. This study explores the practices and challenges associated with switching RA patients to b/tsDMARDs in Pakistan. By incorporating perspectives, it aims to identify barriers, facilitators, and actionable strategies for optimizing RA management in this region.

MATERIALS AND METHODS

This was a cross-sectional survey conducted among rheumatoid arthritis patients in Pakistan. Adults diagnosed with RA and receiving treatment at tertiary care hospitals or outpatient clinics were included. Surveys were translated into Urdu to ensure comprehension. Separate structured questionnaires were developed for patients and rheumatologists. The questionnaire contained questions regarding willingness to switch to b/tsDMARDs, perceptions of injection-based therapies, financial and logistical barriers to treatment access and affordability or willingness to pay. Data were collected by the researchers themselves at two different institutes i.e. Gulab Devi Teaching Hospital and Gujranwala Medical College Teaching Hospital, Gujranwala. The data was entered and analyzed through SPSS-25.

RESULTS

There were 52 patients (45%) preferred biological and targeted synthetic disease-modifying antirheumatic drugs. Regarding perceptions and challenges, we found that patients prefer two to

Table 1: Characteristics of sampled population regarding preference for non-conventional DMARDs (n=116)

Characteristic	No.	%
Disease duration >5 years		
Yes	74	64.0
No	42	36.0
Disease severity by DAS28		
High Disease activity	32	28.0
Moderate disease activity	60	52.0
Low disease activity	24	21.0
Preference for non-conventional DMARDs		
Yes	52	45.0
No	64	55.0
Reason for non-preference for nonconventional DMARDs		
Fear of injections being the last treatment	17	27.0
Preference for 2 to 3 tablets	36	56.0
Needle Phobia	8	13.0
No other reason	3	5.0
Willingness to pay		
Yes	16	14.0
No because of financial constraints	100	86.0

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Table 2: Cross-tabulation between characteristics of sampled population and preference for non-conventional DMARDs (n=116)

Variable	Categories	Preference for non-conventional DMARDs	Conventional	P value using Chi-square test
Disease duration >5 years	Yes	52 (45%)	22 (19%)	<0.001
	No	-	42 (36%)	
Disease severity by DAS28	High Disease activity	16 (14%)	16 (14%)	0.78
	Moderate disease activity	26 (22%)	34 (29%)	
	Low disease activity	10 (9%)	14 (12%)	
Willingness to pay	Yes	11(9%)	5(4%)	0.03
	No (Financial constraints)	41	59(51%)	

Table 3: Regression analysis for prediction of preference for non-conventional DMARDs and characteristics of sampled population and (n=116)

Variable		B	S.E.	Wald	df	Sig.	Exp (B)
Step 1a	Disease duration (1)	-22.772	5981.823	.000	1	.997	.000
	Disease severity	-	-	5.134	2	.077	-
	Disease severity (1)	.819	.712	1.323	1	.250	2.268
	Disease severity (2)	1.395	.627	4.942	1	.026	4.033
	Willingness pay (1)	-1.676	1.103	2.308	1	.129	.187
	Constant	1.695	1.088	2.428	1	.119	5.448

a. Variable(s) entered on step 1: disease duration, disease severity, willingness pay

three tablets (56%) instead of injection-based therapy. 27% patients among sampled population perceived that injection being the last treatment should be avoided. 13% patients had needle phobia. 14% patients were willing to pay for b/tsDMARDswhile 86% patients were not willing to pay because of financial constraints (Table 1). When cross-tabulated these factors with willingness to opt for biological and targeted synthetic disease-modifying antirheumatic drugs, disease severity and willingness to pay were the major factors predicting the preference (Table 2). When we applied regression analysis, only disease severity remained significant in our prediction model (Table 3).

DISCUSSION

The significant disparities in the management of RA in Pakistan, particularly in transitioning patients to b/tsDMARDs.[8,9] While international guidelines emphasize early and aggressive treatment to achieve remission, local challenges such as financial constraints, limited access, and patient compliance issues hinder optimal outcomes. The findings underscore the need for tailored strategies to bridge this gap.[10,11]

In our sampled population, 52 patients (45%) preferred biological and targeted synthetic disease-modifying antirheumatic drugs. These results are favourable in terms of high percentage among sampled population because of misconceptions attached with these novel drugs. This implies that the treating physicians can convince their patients for using b/tsDMARDs.[5]

Regarding perceptions and challenges, we found that patients prefer two to three tablets (56%) instead of injection-based therapy. This implies that injection-based therapy is not stranger in our society. 27% patients among sampled population perceived that injection being the last treatment should be avoided. 13% patients had needle phobia. 14% patients were willing to pay for b/tsDMARDs while 86% patients were not willing to pay because of financial constraints. Financial constraints were the primary barrier to accepting b/tsDMARDs. Financial constraints were the most significant barrier. Other barriers included patient compliance issues, anxiety/fear about advanced therapies and concerns about latent infections.[12]

The survey revealed that financial barriers are the predominant obstacle, affecting both patient willingness and rheumatologist decisions. Innovative funding mechanisms, such as government-subsidized programs and philanthropic initiatives, could play a crucial role in mitigating this challenge. Additionally, addressing patient concerns regarding injection-based therapies through education and support programs could improve acceptance rates. Recommendations for improved access include the need for increased government funding and subsidized treatment programs, expanding resources for philanthropic support, advocacy with pharmaceutical companies to lower costs. Future research should focus on longitudinal outcomes to assess the long-term impact of these interventions.

CONCLUSION

The financial constraints are the major barrier to optimal utilization of the newer biological and targeted synthetic disease-modifying antirheumatic drugs among Pakistani patients with rheumatoid arthritis. To improve RA management in Pakistan, a multifaceted approach is needed. This includes enhancing healthcare infrastructure, advocating for policy changes to reduce medication costs, and fostering collaboration between public and private sectors.

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