

# Frequency and Risk Factors for the Development of Drug Related Problems in Hospitalized Patients with Rheumatoid Arthritis

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## Background

- Rheumatoid arthritis (RA) patients are at high risk for development of drug related problems (DRPs) due to multiple drug use.
- This study aimed to estimate the frequency and risk factors for the development of drug related problems among RA patients.

## Objectives

- To assess the prevalence of DRPs among hospitalized patients with rheumatoid arthritis.
- To assess the frequency and nature of DRPs among hospitalized patients with rheumatoid arthritis.
- To identify the risk factors associated with DRPs

## Methods

- Study Design:** A prospective cohort study
- Study Site:** Department of Rheumatology & Immunology, JSS Hospital, Mysuru, India.
- Study Period:** July 2019–June 2021
- Study Subjects:** Patients diagnosed with rheumatoid arthritis and admitted to hospital
- Study inclusion criteria:** RA patients of any gender and aged  $\geq 16$  years

## Methodology

- Patients were randomised either into intervention or usual care group. All the patients' data was screened for the presence of DRPs.
- Identified DRPs were categorized into problems and their causes using Pharmaceutical Care Network Europe (PCNE V8.02). Clinical pharmacist' proposed interventions to resolve DRPs in intervention group.
- A chi-square test ( $\chi^2$ ) was used to evaluate the association between categorical variables among groups and multiple logistic regression analysis was performed to identify the risk of DRPs.

## Results & Discussion

- A total of 320 RA patients [Intervention group, n=160 and usual care group, n=160] were enrolled in this study.
- Overall, 463 DRPs were identified among 88.4% of patients, and frequency of DRPs was 1.6 per patient.
- Treatment safety 191/463 (41.2%) and patient related factors 149/528 (28.2%) was the most common category and cause of DRPs respectively.

| Causes of DRPs based on PCNE V 8.02 |                  |                  |                  |
|-------------------------------------|------------------|------------------|------------------|
| Code & Primary domain               | Total n (%)      | UCG n (%)        | MDCT n (%)       |
| C1 - Drug selection                 | 132 (25)         | 62 (24.7)        | 70 (25.3)        |
| C2 - Drug form                      | 2 (0.4)          | 0 (0)            | 2 (0.7)          |
| C3 - Dose selection                 | 56 (10.6)        | 29 (11.6)        | 27 (9.7)         |
| C4 - Treatment duration             | 42 (7.9)         | 19 (6.4)         | 23 (8.3)         |
| C5 - Dispensing                     | 43 (8.1)         | 24 (89.6)        | 19 (6.9)         |
| C6 - Drug use process               | 104 (19.7)       | 50 (19.9)        | 54 (19.5)        |
| C7 - Patient related                | 149 (28.2)       | 67 (26.7)        | 82 (29.6)        |
| <b>Total</b>                        | <b>528 (100)</b> | <b>251 (100)</b> | <b>277 (100)</b> |

- Majority (91.3%) of the interventions were accepted and led to resolution of 217/225 (96.4%) DRPs.
- DRPs resolution was much higher in intervention group as compared to the usual care group 98/221 (44.3%).

## Result & Discussion

- Advanced age and polypharmacy were the common risk factors identified for the development of DRPs

| Variables                   | Parameters     | DRPs |    | OR at 95% CI*     | P value |
|-----------------------------|----------------|------|----|-------------------|---------|
|                             |                | Yes  | No |                   |         |
| Age distribution (in years) | <19            | 13   | 9  | 1                 |         |
|                             | 19-40          | 86   | 12 | 4.58 (1.79-11.70) | 0.0014  |
|                             | 41-60          | 120  | 10 | 8.30 (2.85-24.14) | 0.0001  |
|                             | 61-80          | 51   | 4  | 8.82 (2.34-33.23) | 0.0013  |
|                             | >80            | 13   | 2  | 4.50 (0.81-24.98) | 0.085   |
| Polypharmacy                | $\leq 5$ drugs | 52   | 24 | 1                 | -       |
|                             | >5 drugs       | 231  | 13 | 8.20 (3.91-17.17) | <0.0001 |

## Conclusion

This study revealed DRPs are common among Indian RA patients and those are related to the treatment safety and efficacy. Clinical pharmacists' provided interventions had significant impact on DRPs resolution among RA patients.

## Reference

Ma SN, Huri HZ, Yahya F. Drug-related problems in patients with rheumatoidarthritis. Therapeut Clin Risk Manag. 2019;15:505–524.

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