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Assessment of Drug Interaction In Patients with Rheumatoid Arthritis

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ABSTRACT

Assessment of drug interaction in patients with rheumatoid arthritis" evaluates drug interactions in rheumatoid arthritis patients, focusing on those receiving anti-rheumatic drugs. RA, a chronic autoimmune disorder causing joint and other body parts inflammation, managed with DMARDs, NSAIDs, glucocorticoids, and biologics, with methotrexate being a key treatment component. The study was conducted at the Department of General Medicine, Govt. Medical College Hospital Kozhikode, over four months, enrolling 119 patients who met specific inclusion criteria. The results revealed that drug interactions (DIs) are common among RA patients, particularly those receiving methotrexate. Moderate drug interactions were noted between methotrexate and Leflunomide, Tofacitinib, and sulfasalazine, while minor interactions were observed with Hydroxychloroquine. The study also highlighted frequent interactions between methotrexate and NSAIDs, with meloxicam, Etoricoxib, and Etodolac being the most common interacting drugs. Additionally, interactions between methotrexate and gastro protective agents like pantoprazole and omeprazole were noted. Interactions between methylprednisolone and NSAIDs, as well as between Hydroxychloroquine and hypoglycemic agents, were also identified. Demographically, most patients with drug interactions were in the age group of 40-49 years. Gender-wise, drug interactions were more prevalent among female patients (39.49%). Awareness about drug interactions varied, with middle age groups showed higher levels of awareness. However, a significant portion of the patient population remained unaware of potential drug interactions. To minimize drug interaction, this study suggests possible methods including adjustment of medication timing, prevention of moderate drug interaction by prescribing alternate medications within the same category and prescription auditing with the assistance of pharmacy profession.

Keywords: Cross sectional study, rheumatoid arthritis, moderate DI, drug interactions, DMARDs, NSAIDs.

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INTRODUCTION

Rheumatoid arthritis is defined as a systemic autoimmune pathology associated with chronic inflammatory process, which can damage both joints and extra-articular joints, including the heart, kidney, lung, digestive system, eye, skin, and nervous system. If left untreated, RA can lead to permanent joint damage, disability, and decreased quality of life. Early diagnosis and treatment are crucial to manage symptoms, slow disease progression, and improve patient outcomes.[1] In RA, the immune system mistakenly attacks the synovium, the lining of the joint leading to inflammation, hyperplasia, and joint damage. The immune response triggers the production of pro-inflammatory cytokines, enzymes and other molecules causing cartilage degradation, bone erosion and joint deformity. The prevalence of rheumatoid arthritis ranges from 0.5% to 1% in global population and higher prevalence in females than males. [4]

Management of RA include disease modifying anti-rheumatic drug (DMARDs) mainly methotrexate, leflunomide, hydroxychloroquine and sulfasalazine. The newest therapeutic approaches to RA involve the use of JAKi (Janus Kinase inhibitor) mainly tofacitinib. In addition to NSAID, glucocorticoids (prednisolone) and biologics were used. [2]

Rheumatoid arthritis (RA) is a chronic autoimmune disorder causing inflammation of synovial fluid and membrane of joints resulting swelling and pain of joints. The commonly used anti-rheumatoid drugs include DMARD's which consist of biological and non- biological agents. The non-biological agent methotrexate act as immunosuppressant while leflunomide, sulfasalazine and hydroxychloroquine act as immune modulators. The biological agents include JAK inhibitors eg: tofacitinib, TNF α inhibitors eg: etanercept, IL-

1 inhibitors eg: anakinra, IL-6 inhibitors eg: tocilizumab. Additional to these agents Corticosteroids (Prednisolone), NSAID's are used.[3] The study ''Assessment of potential drug-drug interactions and their associated risk factor in patients with rheumatoid arthritis: A cross sectional study" shows that 86.6% patients were presented with ≥ 1 PDDI's, where prednisolone with aceclofenac is the common drug pair involved in the development of PDDIs in patients of any gender, aged ≥16 years diagnosed with RA. Using logistic regression analysis, the risk factors associated with PDDIs was identified. [5]While "Polypharmacy and potential drug-drug interactions in patients with rheumatoid arthritis" study shows Among 188 patients polypharmacy was found in 71.8% of patients and were

331 potential drug-drug interactions (1.77±2.52 DDIs/ patients) and concluded that polypharmacy was associated with increased incidence of PDDI's in RA patients & methotrexate was involved in most drug-drug interaction. [6]The study "Frequency and risk factors for the development of drug

related problems among rheumatoid arthritis patients" Indicates 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 (41.2%) and patient related factors (28.2%) was the most common category and cause of DRPs respectively. Advanced age and poly pharmacy were the common risk factors identified for the development of DRPs and the study that revealed DRPs are common among 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. [7] The study "Drug interactions in the treatment of rheumatoid arthritis and psoriatic arthritis" evaluate all possible drug combinations using three commercially available drug interaction programs. They concluded that extensive knowledge of drug interactions supports optimization of therapy and results in improved patient safety. [8] While "Drug related problems in patients with Rheumatoid arthritis" concluded that early identification of types of DRPs and associated factors may enhance the prevention and management of RA. [9] Another study "Potential drug interactions in patients with rheumatoid arthritis" reveals that all potential interactions were related to methotrexate. Omeprazole was the major representative, accounting for 29.3% of the interactions. This study confirms that polypharmacy is a common therapeutic practice in RA patients. [10]

Aim

To assess drug interactions in patients with rheumatoid arthritis.

Objectives

To assess the drug interactions in patients receiving anti-rheumatic drugs

MATERIALS AND METHOD

Study site: Department of General medicine, Govt. Medical College Hospital Kozhikode

Study design: A cross- sectional study

Study duration: 4 month (from 20/03/24 to 25/07/24)

Selection criteria

Inclusion criteria:

- Patients of both sex
- Patients of age above 20
- Patients receiving anti-rheumatic drugs with poly pharmacy prescription for 6 months.

Exclusion criteria:

- Patient history of drug allergies intolerance and non-compliance
- Pregnant and lactating women

Sample size: A total of 119 patients enrolled in to the study[7].

Study approval: The study protocol was submitted to IRC & IEC and was approved to the same.

Study population: Patients visiting the outpatient department of rheumatology and those who satisfy inclusion and exclusion criteria.

Study procedure:

A cross- sectional study was carried out for a period of 4 months with the objective of assessment of drug interaction among rheumatoid arthritis patients receiving anti- rheumatoid drugs from Govt. Medical College, Calicut. Data collected from patients with rheumatoid arthritis based on inclusion criteria. A specially designed data entry format was used to enter all patient details like name, age, sex, duration of therapy, past medical history, medical history, co morbidities associated, & drugs prescribed and drug interactions were noted. Prescription was analyzed for drug interaction possibilities using UpToDate software.

Statistical analysis:

Statistical analysis was done to found mean and percentage frequency.

RESULTS AND DISCUSSION

A total of 119 patients who satisfied the inclusion and exclusion criteria were enrolled in to the study.

Demographic Data

Age wise distribution

Table 1: Drug interaction frequency with age

SL NO	Age	No Of Patients	Percentage
1	20-29	4	3.3
2	30-39	6	5.04
3	40-49	16	13.44
4	50-59	11	9.24
5	60-69	7	5.88
6	70-79	5	4.20
7	80-89	1	0.84
8	None	69	57.9
	Total	119	100

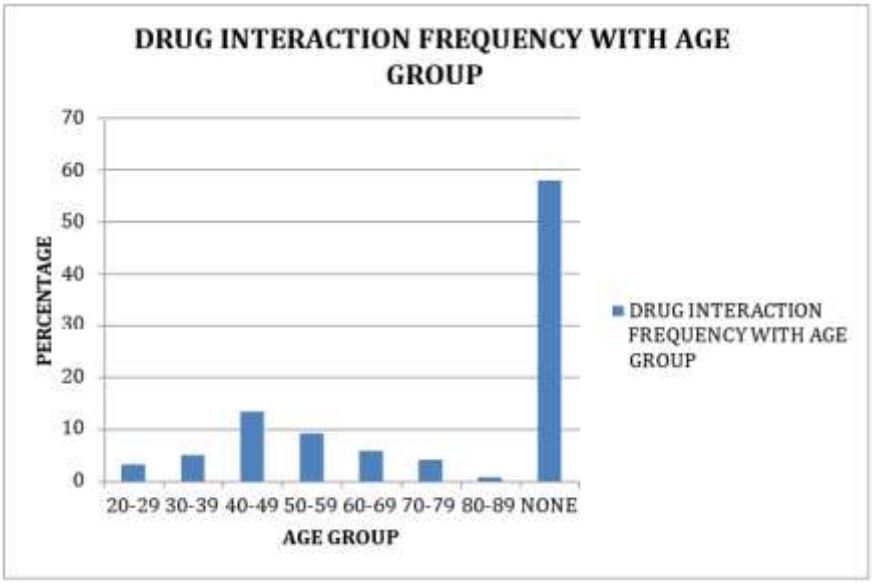

Figure 1: Drug Interaction Frequency with Age Group

From table and fig. majority of patients under the age group of 40-49 (13.44%, n=16) showed drug interaction, then 50-59 (9.24%, n=11), 60-69 (5.88%, n=7), 30-39 (5.04%, n=6), 70-79 (4.20%, n=5), 20-29 (3.3%, n=4) and the least number of patients under 80-89 (0.84%, n=1) & 69 patients had no drug interactions (57.9%).

GENDER WISE DISTRIBUTION

Table 2: Drug Interaction Frequency with Gender

Sr no	Sex	No of patients	Percentage frequency
1	Female	47	39.49
2	Male	3	2.52
3	None	69	57.9
	Total	119	100

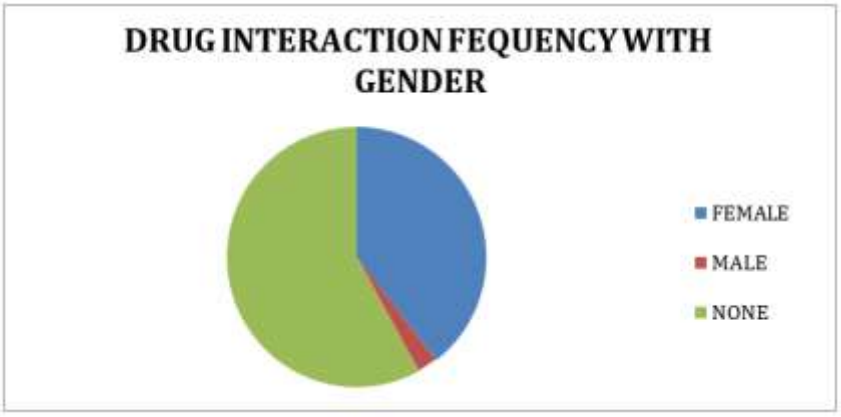

Figure 2: Drug Interaction with Gender

From table and graph drug interaction was more common in female patients than male patients. Out of 119 patients enrolled in study drug interaction was found in 50 patients, 47 were female

patients with percentage frequency 39.49 and 3 were male patients with percentage frequency 2.52 &69 patients had no drug interactions (57.9%).

COMORBIDITIES

Table 3: Drug Interaction Frequency with Comorbidities

Comorbidities	No of patients	Percentage
Diabetes	5	4.20
Hypertension	1	0.84
None	113	94.95
Total	119	100

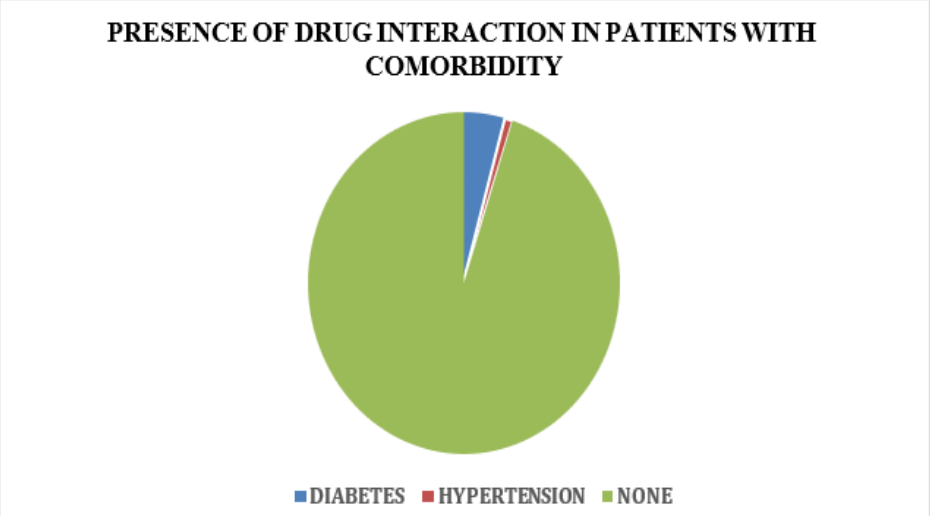

Figure 3: Presence of Drug Interaction in Patients with Comorbidity

The main co morbidities associated with rheumatoid patients enrolled into our study were diabetes, hypertension, hyperlipidemia and asthma. Out of these, patients with diabetes and hypertension only showed drug interactions. A total 119 patient enrolled in to study5 DI were observed in diabetic patients (4.20 %), 1 DI was observed in hypertensive patient (0.84%) and no DI observed in hyperlipidemia and asthma patients. Diabetes patients experienced more drug interaction than patients with other co morbidities. 113 patients had no DI (94.95%) with comorbid drugs.

DRUG INTERACTION BETWEEN DMARD's

Drug Interactions Between Methotrexate And Other DMARD'S

Table 4: Drug Interaction between DMARD'S

Interacting Pair	Severity	Frequency	Percentage Frequency
Methotrexate+ Leflunomide	Moderate	14	11.76
Methotrexate+ Tofacitinib	Moderate	2	1.68
Methotrexate+ sulfasalazine	Moderate	5	4.20
Methotrexate+ Hydroxy Chloroquine	Minor	37	31.09
None	-	61	51.26
Total		119	100

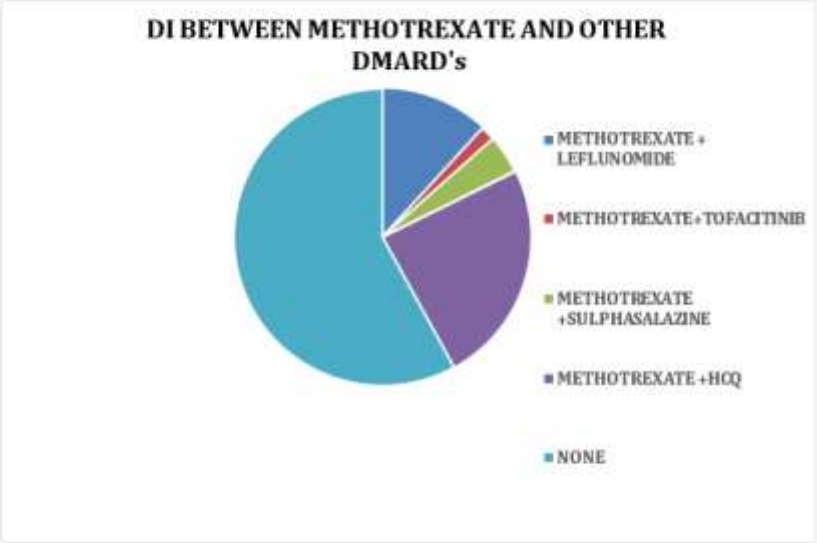

Figure 4: Drug Interaction between DMARD's

From above table and graph, a total 119 patients enrolled in the study combination of MTX with leflunomide, tofacitinib and sulphasalazine showed moderate drug interaction and combination of MTX with HCQ showed minor DI. Among these moderate DI was seen on methotrexate with leflunomide (11.76%, n=14), then with sulfasalazine (4.20%, n=5), followed by tofacitinib (1.68%, n=2). Methotrexate showed minor interaction with HCQ (31.09%, n=37) and 61 patients had no drug interaction (51.26%) between methotrexate and other DMARD's.

Drug Interaction between DMARD'S And Other Drugs

Drug Interactions between Methotrexate and NSAIDS

Table 5: Drug Interaction between Methotrexate and Other Drugs

Interacting pair	Frequency	Percentage Frequency
Methotrexate+ Aceclofenac	1	5.88
Methotrexate+ Etodolac	3	16.6
Methotrexate+ Etoricoxib	5	29.4
Methotrexate+ Meloxicam	7	41.1
Methotrexate+ Naproxen	1	5.88
Total	17	100

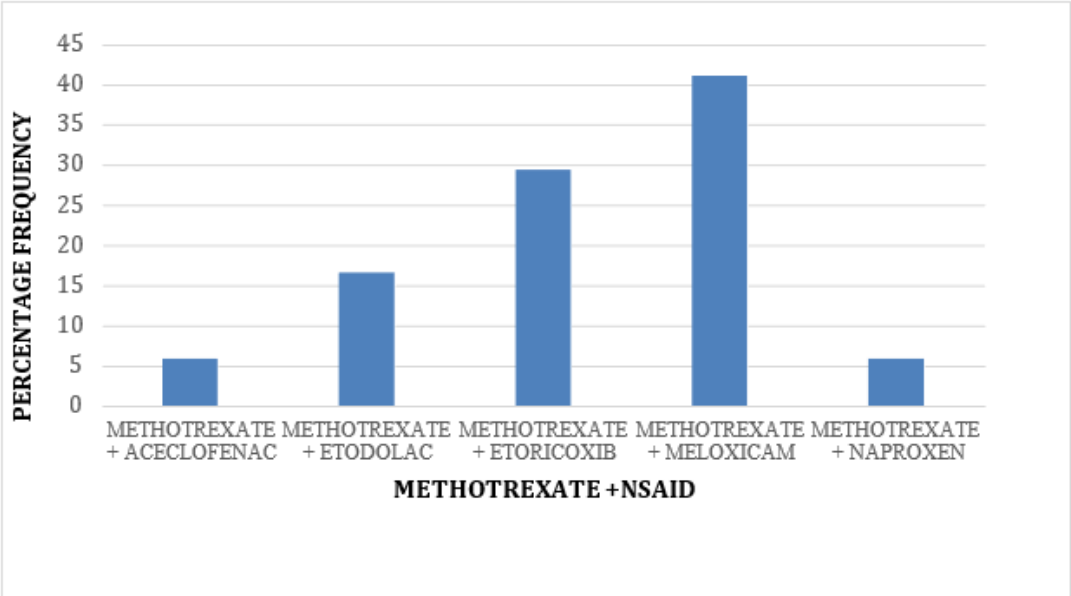

Figure 5: Drug Interaction between Methotrexate and NSAID's

From above table and graph, a total of 17 drug interactions were observed between methotrexate and NSAIDs. Majority of DI had seen on meloxicam with percentage frequency 41.1 (n=7), then with etoricoxib with percentage frequency 29.4 (n=5), followed by etodolac with percentage frequency 16.6(n=3) and least with naproxen and aceclofenac each with percentage frequency 5.88(n=1).

DRUG INTERACTION BETWEEN METHOTREXATE AND GASTROPROTECTIVE AGENTS

Table 6: Details of Drug Interaction between Methotrexate and Gastroprotective Agents

Interacting pair	Severity	Frequency	Percentage Frequency
Methotrexate + Omeprazole	Moderate	2	18.18
Methotrexate + Pantoprazole	Moderate	8	72.72
Methotrexate + Rabeprazole	Moderate	1	9.09
Total		11	100

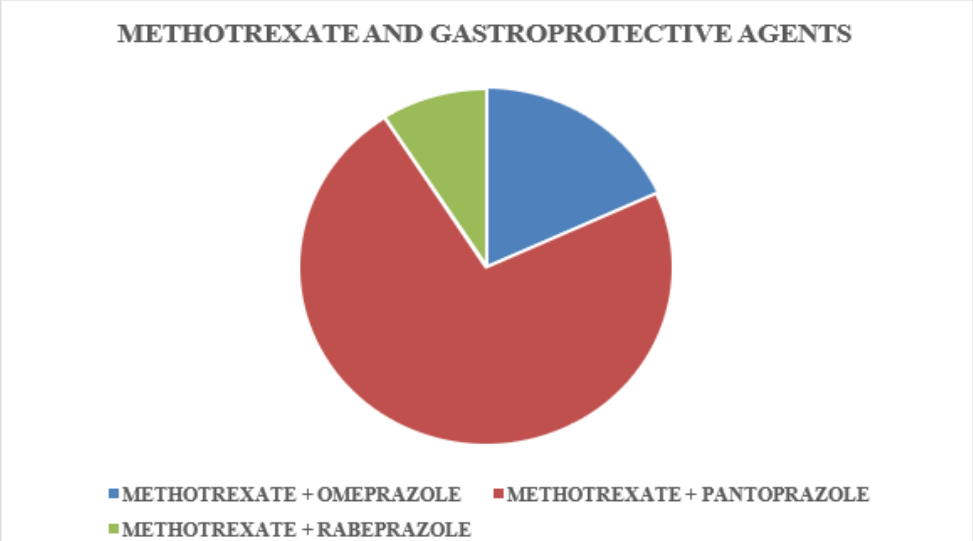

Figure 6: Drug Interaction between Methotrexate and Gastroprotective Agents

From above table and graph, drug interaction between methotrexate and gastro protective agents such as pantoprazole, omeprazole and rabeprazole was found to be moderate. Among these, common DI was with pantoprazole 72.72% (n=8), then omeprazole 18.18% (n=2) and rabeprazole 9.09% (n=1).

Drug interaction between other Antirheumatic drugs

Table 7: Details of Drug Interaction between Methyl Prednisolone and NSAIDs

Interacting Pairs	Frequency	Percentage Frequency	Severity
Methyl Prednisolone + meloxicam	2	1.68	Moderate
Methyl Prednisolone + Aceclofenac	1	0.84	Moderate
Methyl Prednisolone + Etoricoxib	3	2.52	Moderate
None	113	94.95	
Total	119	100	

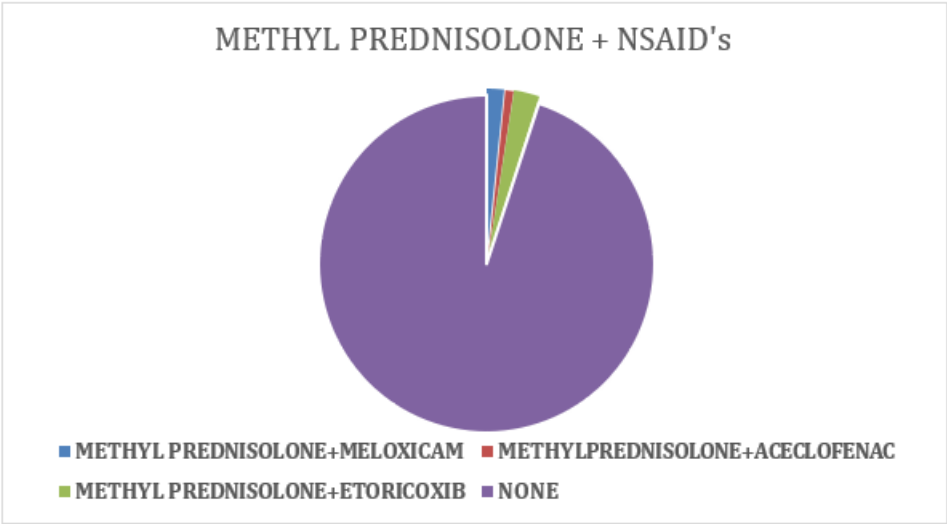

Figure 7: Drug Interaction between Methyl Prednisolone and NSAIDS

From above table and graph a total 119 patients enrolled in the study drug interaction between methyl prednisolone and NSAIDs showed moderate DI, more interaction present between methyl prednisolone and etoricoxib2.52%(n=3) followed by interaction of methyl prednisolone and meloxicam 1.68%(n=2) and the least interaction present between methyl prednisolone and aceclofenac 0.84%(n=1). No drug interactions present between methyl prednisolone and NSAIDs in 113 patients with percentage frequency 94.95.

Drug interaction between DMARD'S and comorbid drugs

Drug interaction between Hydroxy Chloroquine and Hypoglycemic agents

Table 8: Details of Drug Interaction between Hydroxy Chloroquine and Hypoglycemic Agents

Interacting pairs	Frequency	Percentage Frequency	Severity
HCQ + Glimepiride	2	22.2	Moderate
HCQ + Insulin	1	11.1	Moderate
HCQ + Metformin	5	55.5	Moderate
HCQ +Teneligliptin	1	11.1	Moderate
Total	9	100	

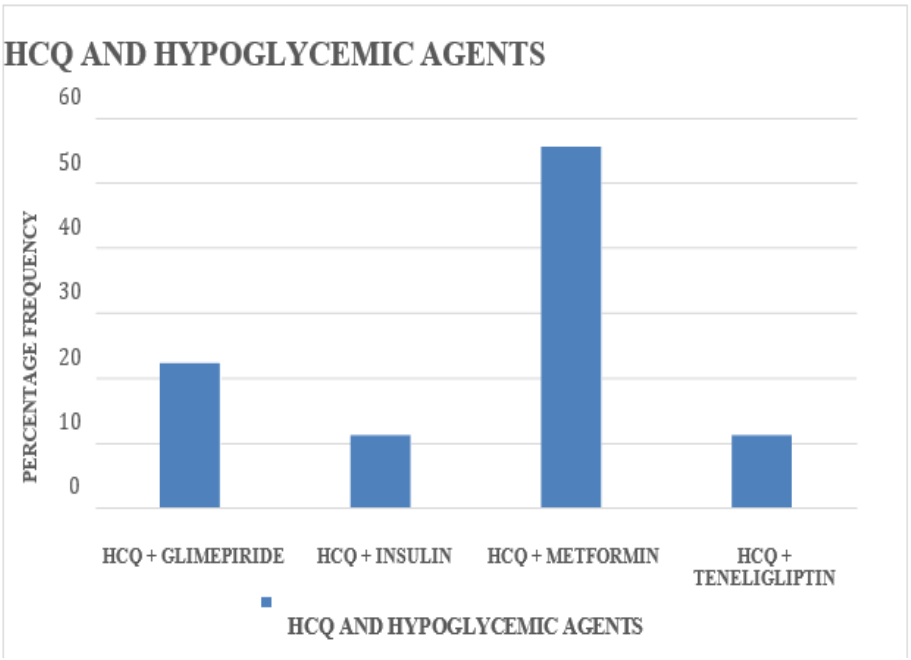

Figure 8: Drug Interaction between Hydroxy Chloroquine and Hypoglycemic Agents

From above table and graph, the interaction of HCQ and hypoglycemic agents was found to be moderate. The most common interaction between HCQ and hypoglycemic agents was with metformin 55.5% (n=5), followed by HCQ and glimepiride 22.2%(n=2) and least with teneligliptin 11.1%(n=1) and insulin 11.1% (n=1).

Relationship between heredity and rheumatoid arthritis

Table 9: Relationship between heredity and rheumatoid arthritis in patients

Heredity	No. Of patients	Percentage
Present	15	12.60
Absent	104	87.39
Total	119	100

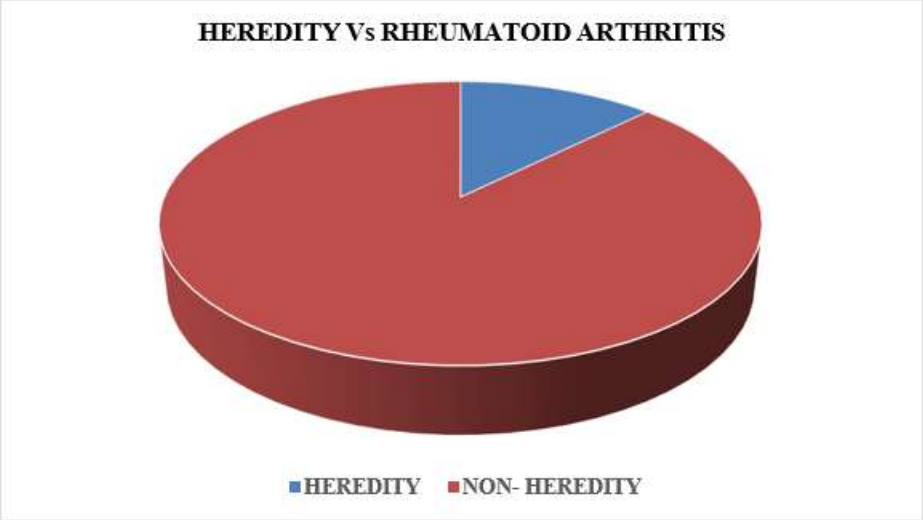

Figure 9: Relationship between Heredity and Rheumatoid Arthritis

From the table and graph, a total of 119 patients enrolled in study, majority of rheumatoid arthritis cases were non-hereditary. Among the studied population 15 cases were found to be hereditary with percentage frequency of 12.6 and 104 cases found to be non-hereditary with percentage frequency 87.39.

Severity and Number of Interacting Pairs

Table 10: Severity and Number of Interacting Pairs

Severity	No. Of interacting Pairs	Percentage Frequency
Minor	2	5.8
Mild	-	-
Moderate	27	79.4
Major	5	14.7
Total	34	100

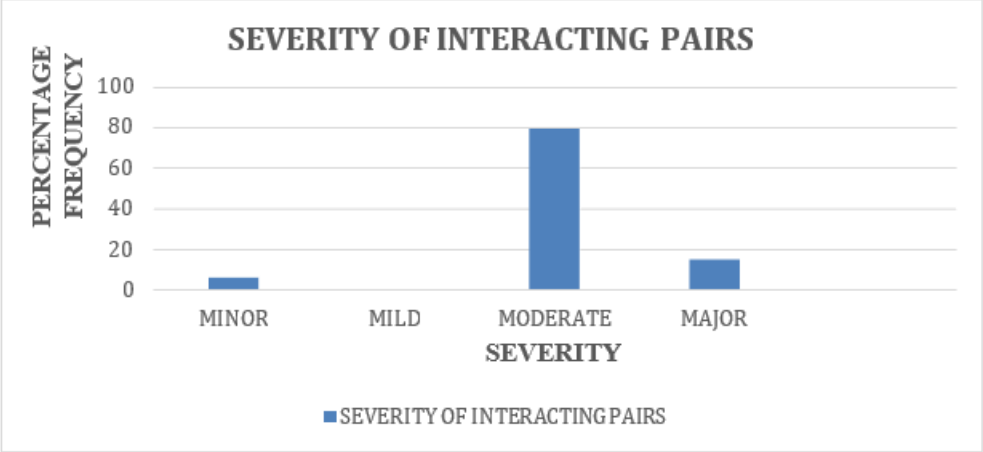

Figure 10: Severity and Number of Interacting Pairs

Out of 34 interacting pairs, 27 were of moderate (79.4%), 5 were major (14.7%), and 2 were minor (5.8%) DIs and no mild DI.

Awareness about drug interaction

Table 11: Age wise distribution of drug interactions in patients

Age group	No of patients	Percentage Frequency
20-29	2	1.68
30-39	5	4.20
40-49	6	5.04
50-59	8	6.72
60-69	6	5.04
70-79	2	1.68
80-89	0	0
NONE	90	75.63
TOTAL	119	100

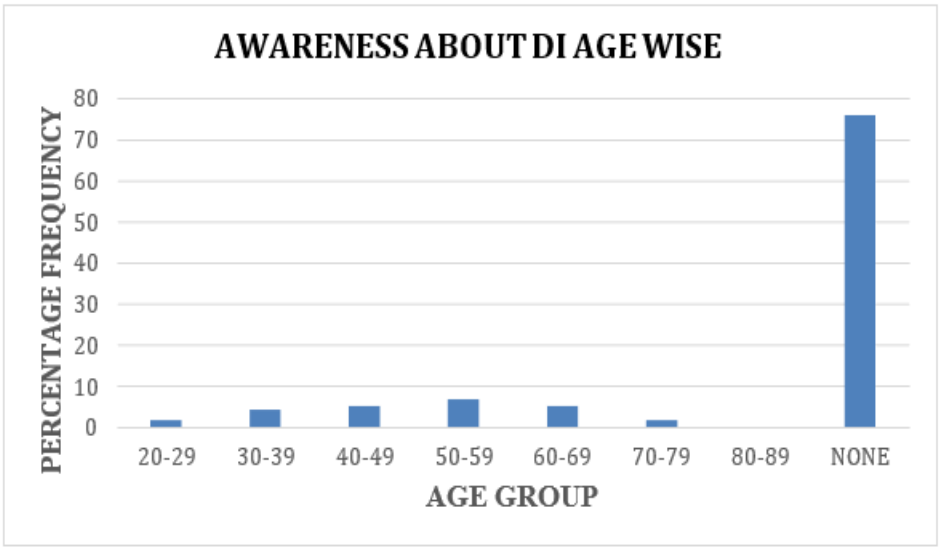

Figure 11: Age Wise Distribution of Drug Interactions in Patients

From the table and figure. a total of 119 patients enrolled in study, majority of patients within age group 50-59 were awared about drug interaction with percentage frequency 6.72 (n=8), followed by 40-49 & 60-69 with percentage frequency 5.04 (n=6), then 30-39 with a percentage frequency of 4.20(n=5) and least with 20-29& 70-79 with percentage frequency

1.68 (n=2). Patients within the age group 80-89 were unawared about DI. Out of 119 patients 29 patients awarded while 90 patients unawared about the drug interaction.

Table 12: Di awareness with gender

Gender	No of patients	Percentage frequency
Female	26	21.84
Male	3	2.52
None	90	75.63
Total	119	100

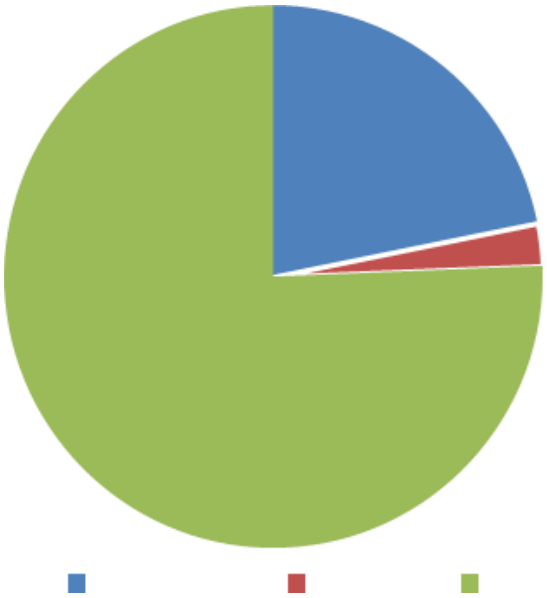

Figure 12: Di Awareness in Gender Wise Manner

From the table and fig. a total of 119 patients enrolled in study, female patients 21.84 % (n=26) were awared about drug interaction and in male patients 2.52% (n=3) were awared and 90 patients were not awared about drug interaction (75.63%).

DISCUSSION

Rheumatoid arthritis is a chronic autoimmune disorder causing inflammation of synovial fluid and membrane of joints resulting swelling and pain of joints. It is non-curable, generally treated with high potential drugs like methotrexate, HCQs, and leflunomide etc. Hence there is more chance for drug interaction among anti-rheumatic drugs. Most of the patients receiving antirheumatoid drugs also experience from co morbidities condition and takes polypharmacy prescription, thus interaction between anti-rheumatoid drugs and other co morbidities drugs also possible. The study

was conducted in tertiary care hospital, a total of 119 patients satisfying inclusion and exclusion criteria were enrolled into the study. The data collected were organized, tabulated, analyzed and described with the help of tables and graphs.

Demographic data

In age wise distribution as per table1 and figure.1 association of drug interaction frequency in majority of patients were under age group 40-49, then with age group 50-59,followed by 60-69,then 30-39,then 70-79,then 20-29 and the least number of patients under age group 80-89. Out of 119, 16 patients were under the age group 40-49 noticed drug interaction with percentage of 13.44, 11 patients were under the age group 50-59 noticed with DI with percentage of 9.24,7 patients under the age group 60-69 were noticed with DI with percentage of 5.88, 6 patients under age group 30-39 observed with DI with percentage of 5.04, 5 patients were under age group 70-79 noticed with DI with percentage of 4.20, 4 patients under age group 20-29 observed with DI with percentage of 3.3, and only 1 patient was noticed DI under the age group 80-89 which have percentage frequency of 0.84. It showed that more drug interaction present in mid age group than old age group. In gender wise distribution as per table 2 and fig.2 119 patients enrolled in study, out of this dug interaction, 47 were observed as female patients and its percentage frequency is 39.49 and 3 were observed as male patient with percentage frequency 2.52 and no drug interactions in 69 patients with frequency of 57.9.[11][12][23]

Comorbidities

From table 3 and fig.3, the main co morbidities associated with rheumatoid patients enrolled into our study were diabetes, hypertension, hyperlipidemia and asthma. Out of these, patients with diabetes and hypertension only showed drug interactions. A total 119 patient enrolled in to study 5 DI were observed in diabetic patients (4.20 %), 1 DI was observed in hypertensive patient (0.84%) and no DI observed in hyperlipidemia and asthma patients. Diabetes patients experienced more drug interaction than patients with other co morbidities. 113 patients had no DI (94.95%) with comorbid drugs.[17][18][19]

Drug interaction between methotrexate and other DMARD's

As per table 4 and fig.4,a total 119 patients enrolled in the study combination of MTX with leflunomide, tofacitinib and sulphasalazine showed moderate drug interaction and combination of MTX with HCQ showed minor DI. Among these moderate DI was seen on methotrexate with leflunomide (11.76%, n=14), then with sulfasalazine (4.20%, n=5), followed by tofacitinib (1.68%, n=2). Methotrexate showed minor interaction with HCQ (31.09%, n=37) and 61 patients had no drug interaction (51.26%) between methotrexate and other DMARD's.

Drug interaction between methotrexate and NSAID's

Out of 119 patients, as per table 5 and fig.5 a total of 17 drug interactions were observed between methotrexate and NSAIDs. Majority of DI had seen on meloxicam with percentage frequency 41.1 (n=7), then with etoricoxib with percentage frequency 29.4 (n=5), followed by etodolac with percentage frequency 16.6(n=3) and least with naproxen and aceclofenac each with percentage frequency 5.88(n=1). [13][14]

Drug interaction between methotrexate and gastro protective agents

As per table 6 and fig.6 Drug interaction between methotrexate and gastro protective agents showed that more interaction present between methotrexate with pantoprazole (72.72%, n=8)and least interaction shown by methotrexate with rabeprazole(9.09%, n=1) and both showed moderate DI. An interaction of 18.18% (n=2) shown by methotrexate with omeprazole and it also showed moderate DI.[15][16]

Drug interaction between methyl prednisolone and NSAIDs

As per table 7 and fig.7, a total 119 patients enrolled in study drug interaction between methyl prednisolone and NSAIDs showed moderate DI, more interaction present between methyl prednisolone and etoricoxib 2.52% (n=3) followed by interaction of methyl prednisolone and meloxicam 1.68%(n=2) and the least interaction present between methyl prednisolone and aceclofenac 0.84%(n=1) and no drug interaction present between methyl prednisolone and NSAIDs in 113 patients(94.95%).[20]

Drug interaction between HCQ and hypoglycemic agents

As per table 8 and fig.8 drug interaction between HCQ and hypoglycemic agents, most interaction is shown by HCQ with metformin (55.55%) and showed moderate DI. [21]An interaction of 22.2% shown by HCQ with glimepiride and also showed moderate DI and least interaction of 11.1% shown by HCQ with both insulin and teneligliptin and both showed moderate DI.

Relationship between heredity and rheumatoid arthritis

As per table 9 and fig.9 among a total of 119 patients enrolled into study, majority of rheumatoid arthritis cases were non-hereditary. Among the studied population 15 cases were found to be hereditary with percentage frequency of 12.6 and 104 patients were found to be non-hereditary with percentage frequency 87.39. [22].

Severity and number of interacting pairs

As per table 10 and fig.10 Relationship between severity and number of interacting pairs showed that 27 interacting pairs with moderate DI (79.4%), major DI present in 5 interacting pairs(14.7%)

and 2 interacting pairs were present with minor DI (5.8%) and no interacting pairs present in mild cases.

Awareness about drug interaction

Age wise:-As per table 11 and fig.11,a total of 119 patients enrolled in study, majority of patients within age group 50-59 were awared about drug interaction with percentage frequency 6.72 (n=8), followed by 40-49 & 60-69 with percentage frequency 5.04 (n=6), then 30-39 with a percentage frequency of 4.20 (n=5) and least with 20-29& 70-79 with percentage frequency 1.68 (n=2). Patients within the age group 80-89 were unawared about DI. Out of 119 patients 29 patients awared while 90 patients unawared about the drug interaction.

Gender wise: - As per table 12 and fig. 12, a total of 119 patients enrolled in study, female patients 21.84%(n=26) were awared about drug interaction and in male patients 2.52% (n=3) were awared and90 patients were not awared about drug interaction(75.63%).

SUMMARY

The cross sectional study titled "assessment of drug interactions in patients with rheumatoid arthritis" was conducted with objective of assessing drug interactions in patients receiving anti rheumatoid drugs. The data collected from general medicine department, Govt. medical college Kozhikode. A total of 119 subjects were enrolled in the study. Data was collected from subjects after receiving their consent and results were analyzed using "UpToDate" software. In age wise distribution out of total 119 patients majority of drug interactions occur in patients within age group 40-49 and the least no of patients under age group 80-89.From the study occurrence of RA more in female than male patients. Drug interaction is more common in females than males with percentage frequency 39.49 and 2.52 respectively. Among Comorbidity conditions, the majority of drug interactions present in diabetes patients(4.20%) followed by patients with hypertension (0.84%). Among the 119 patients, most of drug interaction of methotrexate and other DMRADs was with hydroxychloroquine (minor) and least with Tofacitinib with percentage frequency 31.09 and 1.68 respectively. The combination of methotrexate and leflunomide showed moderate DI (11.76%).The most common interaction between methotrexate and NSAIDs is seen with meloxicam(41.1%) and least with aceclofenac and naproxen(5.88%). The interactions of methotrexate and gastro protective agents were most common with pantoprazole(72.72%) and least with rabeprazole(9.09%).The drug interaction between methyl prednisolone and NSAIDs was more common with etoricoxib (2.52%) and least with aceclofenac (0.84%).The most common interaction between HCQ and hypoglycemic agents is with metformin (55.5%) and least with teneligliptin(11.1%) and insulin(11.1%). Out of 119 studied populations, majority of rheumatoid

cases were non hereditary (87.39%),and 12.6% cases found to be hereditary. Among the interacting pairs most of interactions were moderate DI. The majority of patients within age group 50-59(6.72%) were awared about drug interaction and least within 20-29(1.68%) and 70-79(1.68%) were awared and the patients under age group 80-89 were unawared, among female 21.84% were awared about drug interaction and in male 2.52% were awared.

CONCLUSION

Rheumatoid arthritis, chronic autoimmune disorder causing inflammation of joints, generally treated with highly potential drugs like methotrexate, HCQs, and leflunomide etc. Hence there is a chance for drug interaction between anti-rheumatic drugs and with drugs used for comorbidity conditions. Thus, conducting study on "Assessment of drug interaction in patients with rheumatoid arthritis" is important for detecting possible drug interactions. Most interactions occurred in female patients of age group 40-49. Co morbid conditions, diabetes also experienced in patients and takes polypharmacy prescription, thus of drug interactions in rheumatic patients. Methotrexate had moderate-severity interactions with other DMARDs (leflunomide, tofacitinib, sulphasalazine) and more severe interactions with NSAIDs were with meloxicam. Alarmingly, most patients were unaware of these potential drug interactions.

To minimize drug interaction following methods may be suggested,

1. Adjust medication timing
2. Moderate drug interaction should be prevented by prescribing alternate medications within the same category.
3. Prescription auditing must be conducted with the assistance of pharmacy profession
4. Due to the time limitations, we have conducted a cross sectional study, expanded studies like prospective cohort studies will give better results.

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