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PRESCRIBING IN RHEUMATOLOGY OUT-PATIENT DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL: A CROSS SECTIONAL, OBSERVATIONAL STUDY

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ABSTRACT

Background: Globally, irrational drug prescribing is a great challenge for health care systems and a widespread phenomenon in developing countries. With musculoskeletal disorders being a prime contributor of chronic ill health and restricted daily activities, it necessitates use of spectrum of prescription and non-prescription drugs. The present study thus attempts to study the spectrum of presentations and prescribing in a rheumatology out-patient department (OPD) and assess the prescribing practices, using WHO core drug prescribing indicators. **Methodology:** A cross-sectional observational study was carried out in the outpatient Department of Rheumatology in a tertiary care teaching hospital in Eastern India for a period of four months. Prescriptions were evaluated for name, diagnosis, dose, frequency, duration and route of administration of drugs prescribed. Drug use in health facilities was investigated with the help of WHO prescribing indicators. Data collected was checked for completeness and then statistically analyzed. **Results:** DMARDs were the most commonly prescribed among the drug classes. DMARDs projected maximum prescriptions, with methotrexate toping the charts followed by sulfasalazine, hydroxychloroquine, leflunomide. Steroids included prednisolone, methylprednisolone, deflazacort. Immunosuppresants include azathioprine, tacrolimus, mycophenolate. Amongst NSAIDs, etoricoxib was maximally prescribed followed by naproxen, aspirin and diclofenac. Average number of drugs per prescription was found to be higher. Generic prescribing was 81.98%. **Conclusion:** Periodic assessments of drug usage pattern help identify specific drug use problems, promote rational drug prescribing and help in optimizing implementation of drug procurement policies.

KEYWORDS: Prescription Pattern, WHO Core Drug Prescribing Indicators, NLEM, WB-EDL, Rational Drug Use.

INTRODUCTION

Musculoskeletal disorders ranks first in prevalence as the prime causes of chronic ill health, long-term disabilities and consultation with healthcare professionals, and ranks second for restricted activity days and use of prescription/non-prescription drugs. The management of musculoskeletal problems relies heavily on referral to tertiary care. Self-limiting problems such as soft tissue complaints, chronic conditions such as gout and osteoarthritis, require an initial consultation for diagnosis and management plan and return to primary care. However conditions like inflammatory arthritis require close monitoring and frequent hospital appointments. Laboratory monitoring for toxicities associated with immunosuppressant therapy mandates regular hospital review.[1]

Drug prescribing studies aims to provide feedback to the prescribing clinicians and create awareness among them about rational use of drugs. Rational prescription indicate right drug at right time for right indication and right duration, at an affordable price. Globally, irrational drug prescribing is a great challenge for health care systems[2] and a widespread phenomenon in developing countries.[3] Some irresponsible practices such as: poly-pharmacy, irrational prescribing of medicines, abuse of injectable medicine and non-compliance to prescribing strategies are the most common.[4] The present study thus attempts to study the spectrum of presentations and prescribing in a rheumatology out-patient department (OPD) and assess the prescribing practices, using WHO core drug prescribing indicators.

METHODOLOGY

A cross-sectional observational study was carried out in the outpatient Department of Rheumatology in a tertiary care teaching hospital in Eastern India for a period of four months. Permission from the Institutional Ethics Committee was obtained before starting the research work. Subjects of any age group and of both sexes attending the Rheumatology OPD, who understood the purpose of the study and consented to provide information regarding their health status were included in the study. Pregnant women and lactating mothers were excluded. Subjects and their accompanying family members were interviewed regarding patient's clinical presentation, undergoing treatment plan, socio-demographic baseline data by a pre-structured questionnaire. All decisions relating to management of the patient including drugs and investigations were taken by the treating physician only. Investigator did not interfere in the management of patient and only observe the proceedings. Demographic data was noted. The name, diagnosis, dose, frequency, duration and route of administration of drugs prescribed was recorded. Drug use in health facilities was investigated with the help of WHO prescribing indicators[5], which are the following:

1) Average number of drugs per prescription
2) Percentage of drugs prescribed by generic name
3) Percentage of encounters with an antibiotic prescribed
4) Percentage of encounters with an steroid prescribed
5) Percentage of encounters with an injection prescribed
6) Percentage of drugs prescribed from National Essential Drugs List or Formulary (NLEM 2015[6], WB-EDL[7])
7) Percentage of drugs prescribed by FDCs

Data collected was checked for completeness and then statistically analyzed. Descriptive data was represented as mean or percentages. Where possible, demographic and categorical data was analyzed with parametric or non-parametric tests whichever found applicable.

RESULTS

Over a period of 4 months the study included 360 patients attending rheumatology OPD, of which 68.8% (n=248) were females. Male: female ratio was observed to be 1:2.03. Analysing the age distribution, those belonging from 30 to 50 years were observed to be presenting in highest frequency amongst the study population. (Figure 1)

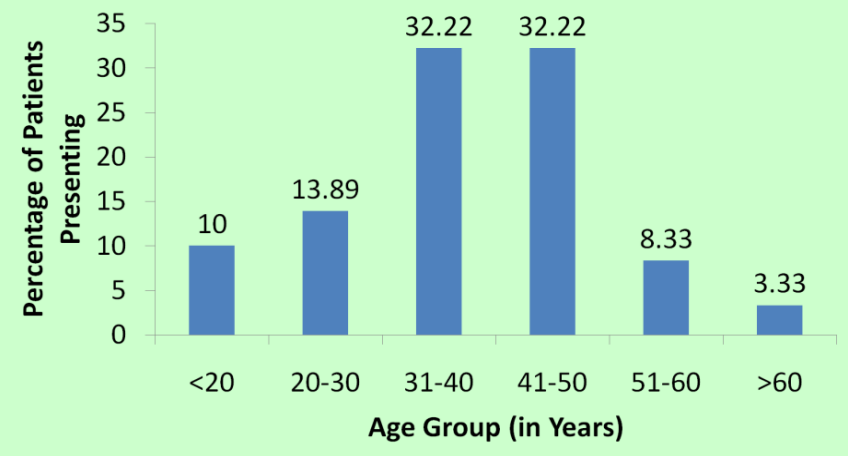


Figure 1: Observed Age Distribution.

Subjects presented with spectrum of presentations like polyarthritis, rheumatoid arthritis, axial spondyloarthropathy, systemic lupus erythematous, takayasu arteritis, low back pain, sacroilitis, undifferentiated connective tissue disorder, rhupus, lupus nephritits, inflammatory joint pain. Amongst these, maximum presentations were observed for polyarthritis, followed by rheumatoid arthritis and axial spondyloarthropathy etc. (Figure 2)

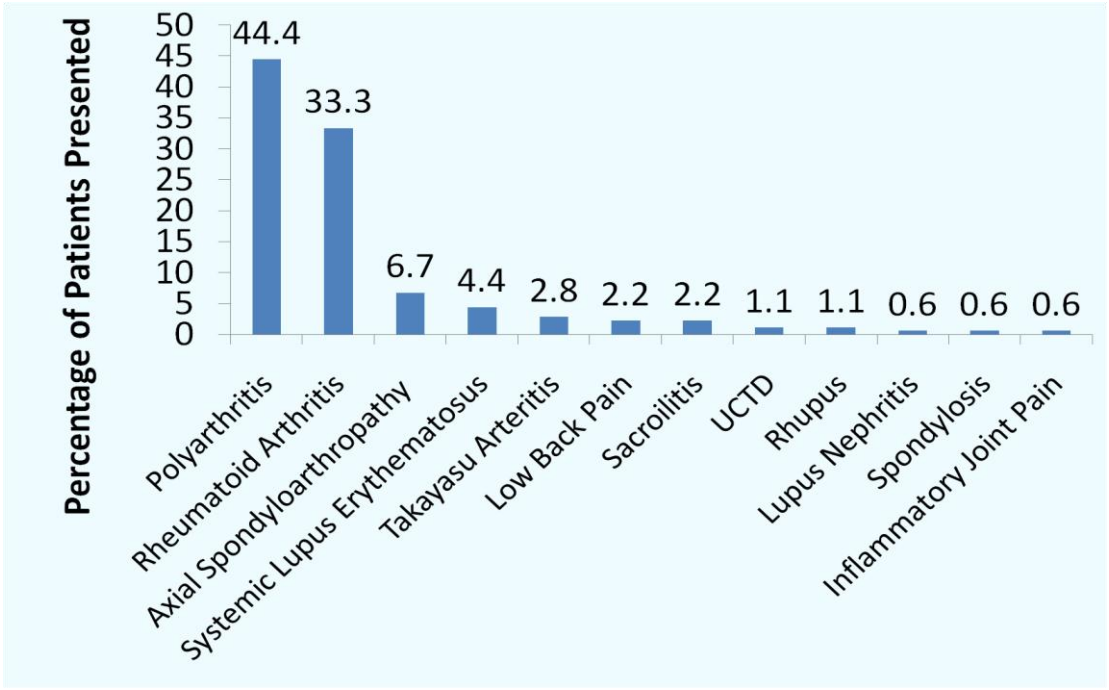


Figure 2: Spectrum of Presentations.

Prescribing pattern was noted and analysed. Prescribed drug classes include DMARDs, nutritional supplementation, antacids, proton pump inhibitors, antiemetic, NSAIDs, steroids, antihypertensive, diuretic, hypolipidaemic, antidepressant, antiepileptics, thyroid supplementation, immunosuppressant, immunomodulators, muscle relaxants. DMARDs were the most commonly prescribed among the drug classes. (Figure 3)

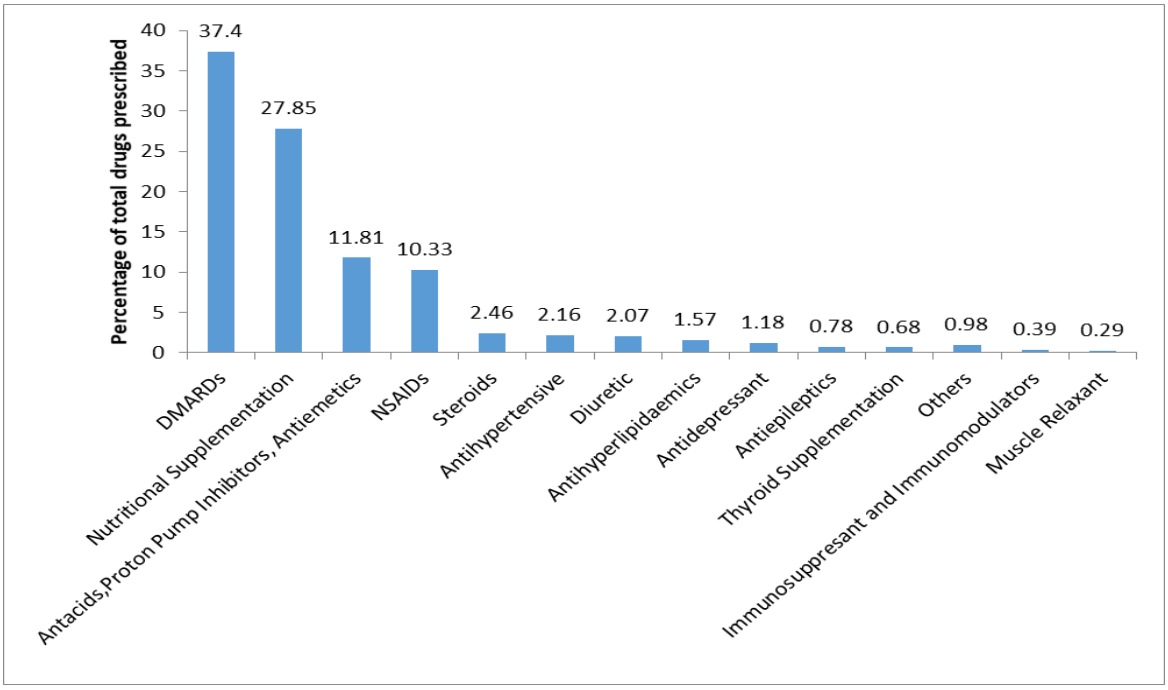


Figure 3: Prescribing Pattern.

Disease Specific Utilization has been represented in Figure 4. While low back pain were mainly treated with NSAIDs, DMARDs were used for conditions like rhupus, lupus nephritis, UCTD, sacrolitis, polyarthritis, RA etc. Nutritional supplementations were used in cases of takayasu arteritis, polyarthritis, RA, SLE, AS, UCTD, rhupus, lupus nephritis, joint pain. DMARDs projected maximum prescriptions, with methotrexate toping the charts followed by sulfasalazine, hydroxychloroquine, leflunomide. Steroids included prednisolone, methylprednisolone, deflazacort. Other drugs included tadalafil, albendazole, diacerein, paracetamol.

Immunosuppresants include azathioprine, tacrolimus, mycophenolate. Nutritional supplementations include calcium and vitamin supplementations. Amongst NSAIDs, etoricoxib was maximally prescribed followed by naproxen, aspirin and diclofenac. (Figure 5)

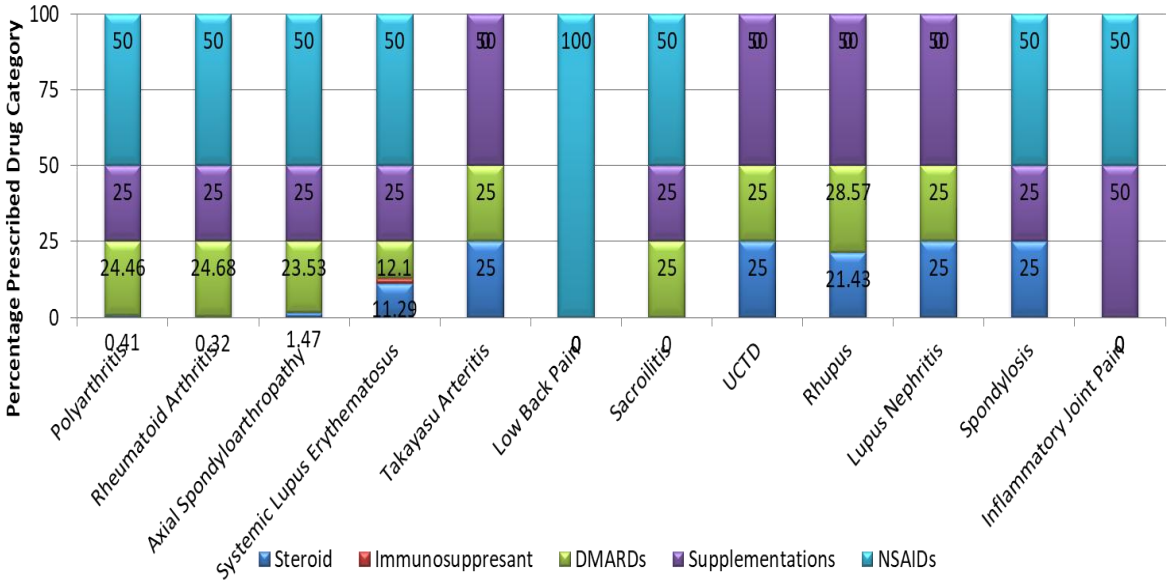
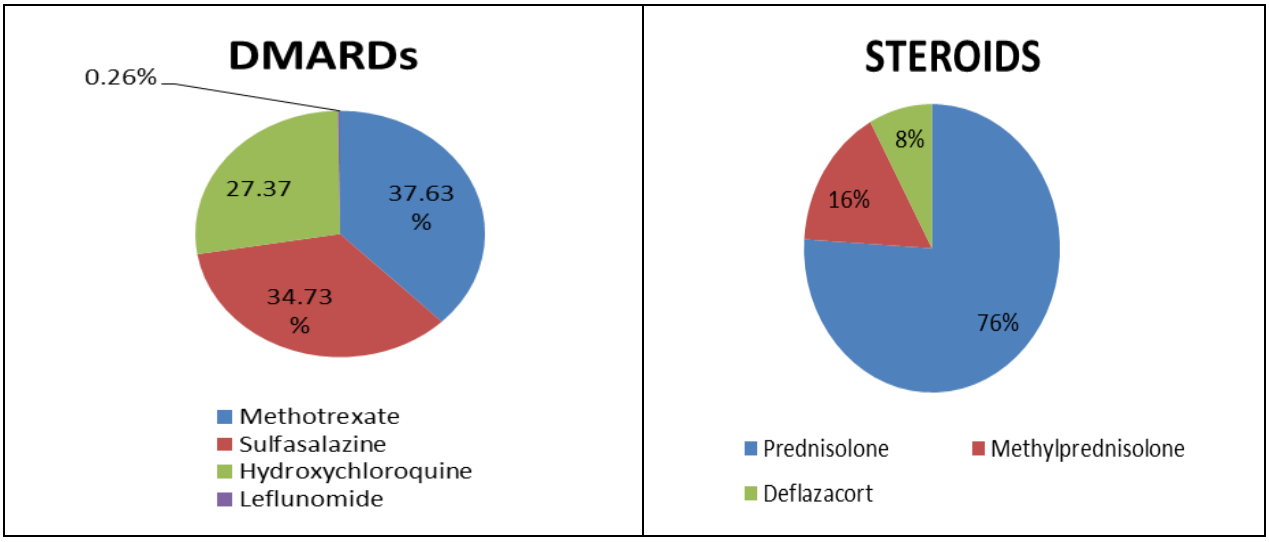


Figure 4: Disease Specific Utilization of Drug Classes.



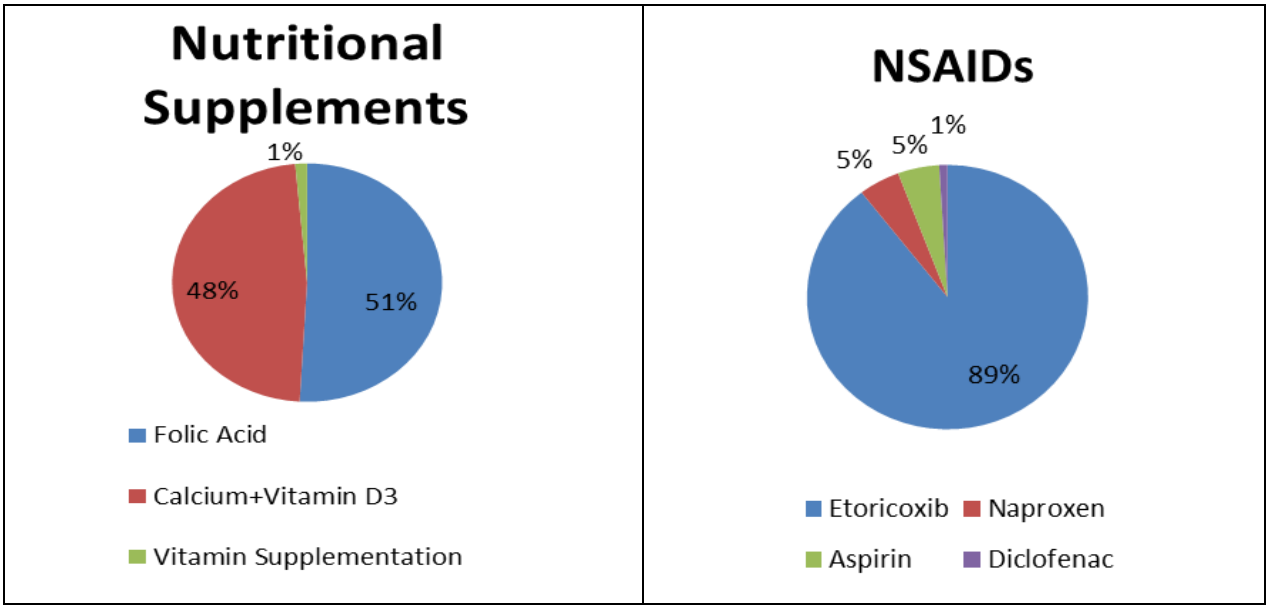


Figure 5: Drug prescribing in individual drug classes.

Assessing WHO core drug prescribing indicators among patients (Table 1), it was observed that average number of drugs per prescription was found to be 5.64. Generic prescribing was 81.98%. No antibiotics were prescribed. Percentage of encounters with an injection prescribed was 27.22, while steroid prescribing was 13.88%. Percentage of drugs prescribed from essential drug list was probed. National List of Essential Medicine (NLEM 2015) and State Essential Drug List were considered as reference standards. Prescribing percentages were found to be 62.79% from NLEM 2015 and 55.81% from State EDL list (WB-EDL).

Table 1: WHO Core Drug Prescribing Indicators.

	Observed Value	Ideal Value/ Ranges
Average no. of drugs per prescription (for a single problem)	5.64	1.6-1.8
Percentage of drugs prescribed by generic name	81.98	100%
Percentage of encounters with antibiotic prescribed	0	20 – 26.8
Percentage of encounters with steroid prescribed	13.88	-
Percentage of encounters with an injection prescribed	27.22	13.4 – 24.1
Percentage of drugs prescribed from Essential Drug List National Essential Drug List (NLEM 2015) State Essential Drug List (WB- EDL)	 62.79 55.81	>90%

DISCUSSION

Prescription pattern monitoring studies mainly facilitates rational drug usage in a population. With irrational drug use being a major problem worldwide, these studies explores the spectrum drug use and its conformance with state or national guidelines.[8] The present study assessed prescription pattern monitoring in rheumatology outpatient department in a government set-up where subjects presented with spectrum of presentations like polyarthritis, rheumatoid arthritis, axial spondyloarthropathy, systemic lupus erythematous, takayasu arteritis, low back pain, sacroilitis, undifferentiated connective tissue disorder, rhupus, lupus nephritits, inflammatory joint pain. Amongst these, maximum presentations were observed for polyarthritis, followed by rheumatoid arthritis and axial spondyloarthropathy etc. Prescribing pattern was noted and analysed. Prescribed drug classes include DMARDs, nutritional supplementation, antacids, proton pump inhibitors, antiemetic, NSAIDs, steroids, antihypertensive, diuretic, hypolipidaemic, antidepressant, antiepileptics, thyroid supplementation, immunosuppressant, immunomodulators, muscle relaxants. DMARDs were the most commonly prescribed among the drug classes.

Assessing WHO core drug prescribing indicators, it was observed that average number of drugs per prescription was found to be 5.64. Our study site being a government set-up revealed a greater tendency to prescribe by generic name rather than by brand name, which is a good sign as it reduces the economic burden on the patients. In other previous studies, it was less. Generic prescribing was 81.98%. No antibiotics were prescribed. Percentage of encounters with an injection prescribed was 27.22, while steroid prescribing was 13.88%. Percentage of drugs prescribed from essential drug list was probed. National List of Essential Medicine (NLEM 2015) and

State Essential Drug List were considered as reference standards. Prescribing percentages were found to be 62.79% from NLEM 2015 and 55.81% from State EDL list (WB-EDL). However conferring to the national drug policy also mandates revision of drug policy according to the needs.

Our findings are strengthened by the prospective collection and comprehensiveness of the data analysed. Our study remains the first of its kind in assessing prescribing conformation to both national and state essential drug list. However a multicentric study could have yielded increased generalizability of results.

Prescribing should abide by principles of RIGHT (right drug, right patient, right dosage, and right cost) and SANE criteria (safety, affordability, need, efficacy). Establishing hospital committees to monitor rational drug usage can be of help in this regard. Attempts should be made by the healthcare system authorities for continuous development and revision of standard treatment guidelines or prescribing policies. Periodic sensitizations in terms of continuous medical educational programs, seminars and awareness campaigns regarding the recent updates on medications and treatment guidelines shall help to promote rational drug prescribing.

CONCLUSION

Prescription pattern monitoring studies seeks to monitor, evaluate and suggest modifications in the prescribing behavior of medical practitioners to foster rational and cost effective healthcare. Such periodic assessments help identify specific drug use problems, promote rational drug prescribing and help in optimizing implementation of drug procurement policies.

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