Initiation of Drug Information Services in Nephrology

T. S. Harsha¹, K. Sri Ramya¹, *Prethy Mathew Karanath¹, M. S. Gireesh², E. Maheswari¹

¹Faculty of Pharmacy, M. S. Ramaiah University of Applied Sciences, Bangalore 560 064
²Department of Nephrology, M. S. Ramaiah Medical College and Hospitals, Bangalore 560 064

*Contact Author e-mail: preethymath.pp.ph@msruas.ac.in

Abstract

Chronic kidney disease (CKD) and end stage renal disease (ESRD) are clinical conditions where optimization of patient care is a challenge. The involvement of clinical pharmacist in providing drug information services assists the health care professionals in optimizing drug therapy thus enhancing patient care. Provision of drug information is one of the major services of a clinical pharmacist and the present study was a first step towards initiating drug information services in the Nephrology unit of M.S Ramaiah Memorial Hospital. The study was conducted for a period of 6 months from December 2013 to June 2014. Clinical pharmacists participated daily for ward rounds and provided drug information services. A total of 38 drug information (DI) queries were asked of which 89.5% (n=34) were by nephrologists and 10.5% (n=4) by residents. Forty six percent (n=16) of the queries were on drug therapy followed by dosage/administration 31% (n=11) and ADRs 14% (n=5). The study concluded that provision of drug information service was successful in our study site and resulted in improved care among renal patients.

Key Words: CKD, Drug Information, Clinical Pharmacy Services, Nephrology

1. INTRODUCTION

Drug information (DI) refers to the provision of accurate, unbiased and factual information by clinical pharmacists as a response to request from healthcare professionals regarding drug therapy. The information may be specific to individual patient or relative to a group of patients. The main aim is to provide up to date information on any aspect of drug use for better patient care. The services provided by the pharmacist tend to improve the rapport between the health care professionals and the patients yielding beneficiary results like improvement in clinical symptoms, better therapeutic outcomes, prevention of suspected ADRs, resolving drug related problems (DRPs) which leads to overall improvement in patient’s clinical condition [1, 2].

Studies have revealed that drug information service is a new concept in developing countries like India and lack of relevant information is one of the major causes of irrational use of drugs leading to therapeutic failure and adverse drug reactions. Therefore it is the responsibility of the clinical pharmacist to update the healthcare professionals on therapeutic drug aspects, which aids in improving the pharmacotherapy [3].

There is a constant flow of new medical information and more than 80000 formulations are available in the market. Physicians might not be able to keep themselves updated about such vast information due to patient overload and time constraints. Hence it is essential that clinical pharmacists provide unbiased evidence based drug information to physician. There is an increased need for creating awareness about these services in the hospitals and encouraging the healthcare professionals to utilize these services for better patient care [4-6].

A study conducted by Prasanna et al., (2013) revealed that there is an increased demand for drug information services in nephrology wards and nephrologists found clinical pharmacists as resourceful persons to handle drug information [7].

CKD and ESRD patients are more prone to drug therapy related problems, therefore provision of drug information services in Nephrology department is necessary to overcome these problems.

2. METHODOLOGY

A hospital based prospective observational study was conducted for a period of six months from December 2013 to June 2014 in Nephrology wards of M.S. Ramaiah Memorial Hospital, Bangalore. The hospital has a nephrology department and a separate dialysis unit both of which are 40 bedded. Approximately 40,000 dialysis sessions per year are carried out by the dialysis unit. A total of 7-10 patients get admitted each day in the Nephrology unit and an average of 40-50 patients are seen by the physicians each day.

The study was approved by the Institutional ethics committee (ECR/215/Inst/Ker/2013). The clinical pharmacist participated in daily ward rounds with the healthcare professionals. Different drug information queries were asked either during ward rounds or by direct interaction with the healthcare professionals. DI request form and DI documentation form were designed by the clinical pharmacist exclusively for the study which included parameters like category of DI query, enquirer’s professional status, purpose of enquiry, mode of request, time required to answer and references used to answer the query. The DI queries were received in a DI request form. The queries were answered after referring various primary, secondary and tertiary resources and documented in DI documentation form.
The DI request and documentation forms used for the study are shown in Fig. 1.

![Drug Information Request Form](image)

### 3. RESULTS

A total of 38 queries were received by the clinical pharmacist during the study period. Majority 89.5% (n=34) of the queries were received from nephrologists and 10.5% (n=4) from residents. About 74% (n=28) of queries were enquired during ward rounds and 26% (n=10) were received through direct access. The purpose of DI queries were to update knowledge 92% (n=35) and for better patient care 8% (n=3). Most of the queries 86.8% (n=33) were answered within 2hrs-2 days, 10.5% (n=4) were answered immediately and 2.6% (n=1) was answered within 2 h. Out of 38, 92.1% (n=35) were drug related queries and 7.8% (n=3) were disease related queries. None of the queries were related to poisoning and others. Majority of the queries belonged to drug therapy 46% (n=16) followed by dosage/Administration 31% (n=11), ADRs 14% (n=5), drug interaction 6% (n=2) and drug of choice 3% (n=1). Considering the resources used in answering the DI queries, most of the queries 42.1% (n=16) were answered using MICROMEDEX software, 18.4% (n=7) were answered using Medscape, Medline, PubMed and using internet, 28.9% (n=11) were answered using textbooks like Goodman and Gilman’s Manual of Pharmacology and Therapeutics, Pharmacotherapy a pathophysiologic approach by Joseph T Dipiro, Koda-Kimble and Young’s Applied Therapeutics, Handbook on Injectable drugs by Lawrence A. Trissel, Drug facts and comparisons, and Martindale and 10.5% (n=4) of queries were answered using journals. The results are shown in Table 1 and Fig. 2.

![Question categories on drug](image)

### 4. DISCUSSION

In India the concept of clinical pharmacists providing drug information is in its infancy and to establish a drug information center (DIC) in hospital setting is a challenge. The efficiency of DIC is often questioned due to lack of trained staff, unavailability of adequate resources and poor documentation. This clearly shows that there is need for establishing more effectively functioning and well equipped drug information centers in our country to provide quality services. In the present study, we aimed at stepping forward to initiate drug information service in the
Among the 38 queries received during the study period, 89.5% of the drug information queries were demanded by nephrologists. Majority (74%) of the queries were asked during ward rounds, which reveals that participation of clinical pharmacist in ward rounds have better role in obtaining positive patient outcomes and also improves the rapport between pharmacist and healthcare professionals. These results are similar to the study conducted [1].

Our study results were similar to [8] and [9], which reported that majority of DI queries were asked on drug therapy, dosage/administration and adverse drug reactions.

Dosage adjustment is one of major concerns in renal failure patients. In our study one-third of the queries were asked on dosage/administration category which is similar to that of a study conducted [7]. This illustrates that the enquirers considered the pharmacists to be professionally efficient and resourceful in providing drug information. Majority of questions were asked to update knowledge (92.1%) which included queries on drug interactions, drug administration and mechanism of action. Queries for better patient care were on renal dosage adjustments and adverse drug reactions. This indicates that clinical pharmacist meets the demand of assisting healthcare professionals in providing better patient care.

Out of 38 drug information queries, 86.8% were answered within 2h - 2 days. Many of the queries were answered using MICROMEDEX and electronic databases. The ease of use of computer and availability of recent, updated and relevant information through database like MICROMEDEX were helpful for the clinical pharmacists in providing evidence based comprehensive information and answering the queries on time.

5. CONCLUSION
The study reveals that provision of drug information services were successful in our study site. Clinical pharmacists provided information on various aspects of drugs in Nephrology department. This shows that clinical pharmacist participation in the nephrology health care team can be beneficial and result in improved care among renal impaired patients.

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REFERENCES
