Need of advance clinical pharmacy services: A case study from Pakistan

Iftikhar Ali, Jehanzeb Khan[1], Aziz Ullah Khan

Department of Pharmacy Services, Northwest General Hospital and Research Centre, Hayatabad, [1]Department of Pharmacy, University of Peshawar, Peshawar, Khyber Pakhtunkhwa, Pakistan

Address for correspondence:
Dr. Iftikhar Ali,
Department of Pharmacy Services,
Northwest General Hospital and Research
Centre, Sector A3, Phase 5, Hayatabad,
Peshawar, Khyber Pakhtunkhwa, Pakistan.
E-mail: iftikhar_rph@yahoo.com

Key words: Clinical pharmacy, drug related problems, Pakistan

ABSTRACT

Clinical pharmacists play a key role in health-care by providing drug information to other health-care professionals, pharmaceutical care to individual patients and developing clinical guidelines and standard treatment protocols for treating various medical conditions in day-to-day practice. A clinical pharmacist offers valuable support in the development of a final prescription with improved patient management and better safety. Increasingly, clinical practice is becoming a team effort with a specialized skill matrix, concentrating on comprehensive support for patient management. A physician definitely leads the team, comprised of a professional and skillful clinical pharmacist, among others, with skill sets to detect drug interactions, adverse effects, and therapeutic incompatibilities to facilitate the health-care team to achieve therapeutic outcomes on a case-by-case basis. We described ten cases of patients diagnosed with tuberculosis, drug related problems identified during the study period and strategies suggestion for improvement of the pharmacy profession.

INTRODUCTION

Clinical pharmacy in Pakistan is still in its early stages. Most Pakistani hospitals lack qualified clinical pharmacists. More than a decade has passed since education in clinical pharmacy practice was introduced in Pakistan, yet, there has been negligible or no improvement in the practice of the pharmacy profession in Pakistani hospitals. Despite the introduction of this field of education, the presence of the clinical pharmacist is minimal to non-existent in the health-care system. This has led to several drug-related problems, including the deaths of patients. In this study, we report on the significance of clinical pharmacy services in a tertiary care hospital and also some suggestions to the stakeholder to take immediate action for the implementation of clinical structure and road map for the pharmacist. We present cases of patients with tuberculosis to highlight the significance of clinical pharmacy services in a health-care setup.

METHODOLOGY

In this study, we assess the drug therapy of ten patients diagnosed with tuberculosis, and were receiving anti-tubercular drugs. Ethical approval was obtained from the hospital and all the data were recorded in predesigned pro-forma for the tuberculosis patients during March 2015 in tertiary care hospital in Peshawar. Briefly the data collection proforma comprised of patient's information, chief complaints, medication history, history of present illness, past medical history, past surgical history, family history, personal history, allergies, review of systems, physical examination, clinical laboratory tests, daily progress report, treatment at hospital, and discharge medications. The types of drug-related problems (DRPs); were recorded, as per Pharmaceutical

Care Network Europe classification (DRP registration form version 6.2).

RESULTS AND DISCUSSION

A total of 10 patients drug therapy were followed, of which 8 patients had 24 DRPs. The identified DRPs were untreated indication (12.5%), monitoring (16.6%), dosing (29.1%), interaction (16.6%), drug use (4.1%), and drug selection (20.8%), as shown in Table 1.

Demographics and clinical features of patients are given in Table 2.

Medication management is a substantial mean in the prevention and therapy of infectious diseases and

Table 1: Types of DRPs

Types of DRPs	Frequency (%)
Untreated indication	
Conditions not adequately treated	3 (12.5)
Monitoring	
Drug monitoring	4 (16.6)
Dosing	
Duration inappropriate	7 (29.1)
Interactions	
Drug interactions	4 (16.6)
Drug use	
Wrong dose taken	1 (4.1)
Drug selection	
Cost of therapy	5 (20.8)

DRPs=Drug related problems

Table 2: Patient demographics and clinical features (*n*=10)

Number of patients	10
Gender (*n*)	
Male	6
Female	4
Age of patients (years)	
Mean	52
Range	27-75
Average hospital stay (days)	
Mean	4.7
Range	03-13
Diagnosis (*n*)	
Tuberculosis	10
Chief complaints/co-morbid conditions (cases)	
Productive cough	7
Fever	6
Nausea	3
Vertigo	1
Yellow discoloration of sclera	1
Abdominal distention	4
Constipation	1
Anorexia	2
Excessive sweating	1

other health problems, however, the growing figure of available drugs and their consumers as well as more composite drug treatments leads to more therapy related problems and complicates follow-up.[1] DRPs are prevalent and lead to a substantial morbidity and mortality,[2,3] increased health-care expenses, which in turn affect both patient's quality of life and the general public.[4] Nursing homes and clinical settings have a high prevalence of such problems, therefore, efficient evaluation of patients total drug use, in the light of clinical evidence, is an actual method to identify DRPs.

Drug-related problems whether actual or potential, usually occur in health-care setup especially in hospitals and can be a basis of major morbidity and mortality.[5] Therefore, it is vital that medication errors must be closely watched so that similar incidents can be stopped in the future.

A projected 620,000 people have tuberculosis, and each year 410,000 are newly infected and 59,000 die from the disease. Today, fewer than 1000 of the estimated 9000 individuals infected with drug-resistant tuberculosis every year have been diagnosed and are undergoing treatment.[6] High incidence of infectious diseases, high usage of antibiotics, and bacterial resistance are reported in developing countries, rising rate in resistance is increasingly seen as a global problem.[7] There is a huge need for taking steps to promote rational antibiotics use following the parameters; right indication, right duration, right dose of therapy, and right route of administration. Antibiotics are the most commonly used and misused drugs by patients and prescribers.[8]

In developed world, pharmacists play an important role in health-care by providing drug information to physicians, pharmaceutical care to patients and developing clinical guidelines and standard protocols for treating various clinical conditions in day-to-day practice. Contrary to this, in Pakistan, the role of clinical pharmacist to assist the physician while making a decision on drug therapy, monitoring the prescribed drug therapy, and solving the drug-related problems and thereby providing them pharmaceutical care is neglected or underestimated.

In Pakistan, both the hospital/clinical pharmacy are quiet at its gross-root level and due to this reason the involvement of the pharmacist in direct patient care is partial and this is also the key reason for the absence of a clinical module in the Doctor of Pharmacy syllabus.[9] Here are some strategies suggestion based on the available literature in clinical pharmacy and practice

in Pakistan and acceptance of the suggested strategies for correcting such imperfections in the pharmacy syllabus, teaching methodologies, pathway program, and recognition of pharmacist role in direct patient care in health-care system will go a long way in the direction of producing skillful and expert pharmacists who can institute ideal pharmacy practice system in the country.

Observance insight the limitations in the pharmacy education system in the country, there is dire need of the model that not merely provides basis for productive syllabus development but also describe some way to validate the syllabus, full or partial, implementation of this model will facilitate the pharmacy organizations to deliver valuable knowledge to pharmacy graduates, which will more contribute to quality health-care system in the country in the perspective of pharmacy education. Syllabus improvement has always been a central issue for discussion. The growing role of pharmacists in direct patient care has made it compulsory for pharmacy institutions to change and upgrade their syllabus intermittently.[10,11]

When developing a syllabus, qualified and skillful staff, choice of course and clinical contents in the course and teaching methodologies issues are often neglected.[12]

As described by Khan TM, 2010[13], the students should be given the choice to choose their favorite, that is, Pharmaceutical technology or clinical pharmacy.

Similarly in clinical setup, lack of experienced and qualified staff along with the role of the pharmacist as a member of the health-care team in direct patient care does not exist in Pakistan which is a major challenge and a possible reason for the lack of acceptance by the medical and paramedical staff for the role of the pharmacist as a health-care provider.[14]

Even though clinical pharmacy practice has grown into an unavoidable part of the health-care system worldwide and the position has gained due respect and support from patients and the medical professionals equally, it seems, in Pakistan, the government health authorities are turning a blind eye to these developments taking place globally. There are no regulatory guidelines for having a qualified clinical pharmacist in the Pakistani hospitals. In the absence of these guidelines, the patients are not getting the benefit of clinical pharmacy services, and drug-related problems are at an alarming stage. There is increasing

evidence that participation and interventions of clinical pharmacists in health-care have a positive influence on clinical practice.[15] It is now the time that the health authorities in Pakistan recognize the role of clinical pharmacists and take affirmative steps to avoid such incidents in the future.

CONCLUSION

This study elucidates the need of effective clinical pharmacy services and competent clinical pharmacist to highlight the Pharmacotherapy based problems and rationalize the therapy in a hospital setting. In the present case, absence of the clinical pharmacist in hospital setup led to such negligence where a patient pharmacotherapy could have been probably be rationalized by the effort of the clinical pharmacist and by inclusion in a multi-professional team. Level of acceptance by the physicians of the pharmacists' recommendations further demonstrates the effectiveness of the process.
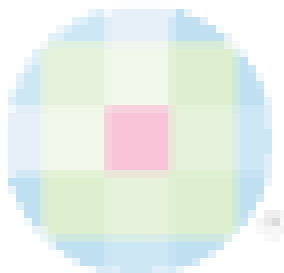
REFERENCES

1. Krähenbühl-Melcher A, Schlienger R, Lampert M, Haschke M, Drewe J, Krähenbühl S. Drug-related problems in hospitals: A review of the recent literature. Drug Saf 2007;30:379-407.
2. Roughead EE, Gilbert AL, Primrose JG, Sansom LN. Drug-related hospital admissions: A review of Australian studies published 1988-1996. Med J Aust 1998;168:405-8.
3. Buajordet I, Ebbesen J, Erikssen J, Brørs O, Hilberg T. Fatal adverse drug events: The paradox of drug treatment. J Intern Med 2001;250:327-41.
4. Ernst ME, Iyer SS, Doucette WR. Drug-related problems and quality of life in arthritis and low back pain sufferers. Value Health 2003;6:51-8.
5. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: A meta-analysis of prospective studies. JAMA 1998;279:1200-5.
6. Sultan F, Khan A. Infectious diseases in Pakistan: A clear and present danger. Lancet 2013;381:2138-40.
7. Sharma M, Eriksson B, Marrone G, Dhaneria S, Lundborg CS. Antibiotic prescribing in two private sector hospitals; one teaching and one non-teaching: A cross-sectional study in Ujjain, India. BMC Infect Dis 2012;12:155.
8. Remesh A, Salim S, Gayathri AM, Nair U, Retnavally KG. Antibiotics prescribing pattern in the in-patient departments of a tertiary care hospital. Arch Pharm Pract 2013;4:71-6.
9. Bhagavathula AS, Sarkar BR, Patel I. Clinical pharmacy practice in developing countries: Focus on India and

Pakistan. Arch Pharm Pract 2014;5:91-4.

10. Khan T, Anwar M, Mueen Ahmed K. A perspective for clinical pharmacy curriculum development and validation in Asian developing nations. J Young Pharm 2011;3:151-4.

11. Khan TM. Critical considerations in pharmacy curriculum development in South Asian and Southeast Asian developing nations. Am J Pharm Educ 2010;74:176g.

12. Khan TM. Deficiencies in clinical pharmacy curricula in developing Asian nations. Eur J Hosp Pharm 2013;20:64.

13. Khan TM. Glimpse of pharmacy education in Pakistan and current challenges to pharmacy education. Int J Pharm Technol Pract 2010;1:5-10.

14. Khan T. Challenges to pharmacy and pharmacy practice in Pakistan. Australas Med J 2011;4:230.

15. Khan AU, Ali I, Zafar R, Khalil A. Identification of drug-related problems and pharmacist's interventions in asthmatic patients at a private tertiary care facility – Pakistan. Arch Pharm Pract 2015;6:33-7.

Author Help: Reference checking facility

The manuscript system (www.journalonweb.com) allows the authors to check and verify the accuracy and style of references. The tool checks the references with PubMed as per a predefined style. Authors are encouraged to use this facility, before submitting articles to the journal.

- The style as well as bibliographic elements should be 100% accurate, to help get the references verified from the system. Even a single spelling error or addition of issue number/month of publication will lead to an error when verifying the reference.
- Example of a correct style
  Sheahan P, O'leary G, Lee G, Fitzgibbon J. Cystic cervical metastases: Incidence and diagnosis using fine needle aspiration biopsy. Otolaryngol Head Neck Surg 2002;127:294-8.
- Only the references from journals indexed in PubMed will be checked.
- Enter each reference in new line, without a serial number.
- Add up to a maximum of 15 references at a time.
- If the reference is correct for its bibliographic elements and punctuations, it will be shown as CORRECT and a link to the correct article in PubMed will be given.
- If any of the bibliographic elements are missing, incorrect or extra (such as issue number), it will be shown as INCORRECT and link to possible articles in PubMed will be given.