SciMedCentral

JSM Clinical Pharmaceutics

Short Note

Clinical Pharmacy Quality and Safety Strategies

Zuckermann J*, Martinbiancho JK, and Mahmud SDP

Department of Clinical Pharmacy, Hospital de Clinicas de Porto Alegre, Brazil

***Corresponding author**

Joice Zuckermann, Department of Clinical Pharmacy, Hospital de Clinicas de Porto Alegre- Rua Ramiro Barcelos 2350, sala 935. Porto Alegre, RS-Brazil, Tel: 5551-33597488; Fax: 5551-33598511, Email: jzuckermann@hcpa.edu.br

Submitted: 10 October 2016

Accepted: 09 November 2016

Published: 10 November 2016

ISSN: 2379-9498

SHORT NOTE

Traditionally hospital care is evaluated through indicators that measure negative outcomes [1], such as infection rates, pressure sores, etc. However, quality is an essential aspect of management and hospital care [2]. It is indispensable to understand the quality of hospital care in its different dimensions: structure, process and results, covering efficacy, effectiveness, efficiency, optimization, acceptability, legitimacy and equity besides measuring the effects of this assistance in different health conditions, people and institutions. Such data serves not only for evaluation, but mainly to improve the institutions [3-5] used as structural concept to design a quality improvement model.

The most common intervention offered in health is drug administration. Although the system provides effective treatments, health professionals should also ensure that the benefits overcome the risks. Drug adverse reactions, complex prescriptions, polypharmacy and medication errors, make the use of drugs a potentially dangerous process. Therefore, rational strategies were introduced to minimize the damage, the main one was the development of Clinical Pharmacy [6].

The search for quality improvement should be part of the daily routine of the hospital and, therefore, it is necessary to motorize processes with validated assessment of health indicators. Some quality indicators help pharmacists to measure the quality of drug therapy. The participation of the pharmacist in clinical discussions of the care team is associated with increased evidence-based interventions, a quality indicator of drug therapy [7].

For example, optimal rate of drug intervention describes the proportion of patients eligible to receive proven interventions in chronic disease condition.

Since the beginning of the Hospital de Clínicas de Porto Alegre (HCPA) activities, care quality was as a commitment. Working groups and committees initiated quality programs based on the following basic principles: all activities are focus in the patient; the hospital should offer best practices through process standardization and development protocols care, ongoing assessment by care indicators, participation in quality certification programs and information transparency [8].

Within this approach, the HCPA has since 2001 a Clinic Pharmacy section integrated into the Pharmacy Service. Aiming the adaptation of the hospital pharmacy work to the standards set by the Joint Commission on International Accreditation (JAHCO) and following the recommendations of the American Society of Health-system Pharmacists (ASHP) in order to promote the safe and rational use of medicines, providing integrated care to the patient and the health team. The Pharmacy department focuses its activities on improving quality of patients care through the activities developed by the clinical pharmacist [9].

Clinical Pharmacy is defined as the health discipline in which the pharmacist provides patient care through the practice of rational use of drugs and disease prevention, according to the American College of Clinical Pharmacy. Thus, the main activity of the clinical pharmacist is to interact with the health team, assess and monitor the therapeutic response of patients to interventions, recommendations and provide information on medicines.

The clinical pharmacist is still an innovation in Brazil. In some institutions the activity is well established, especially in those where search of accreditations and certificates of international quality boosted this development. The assessment provided by professional care quality can contribute to enhance the role of the clinical pharmacist and promote the incorporation of new activities, for example, clinical pharmacokinetics whose goal is to improve patient safety by optimizing pharmacotherapy, maximizing the therapeutic efficacy and minimize adverse events.

Regarding the clinical pharmacokinetics in the 80, 35% of American hospitals already had this activity in operation [10]. In 2007, the Brazilian Society of Hospital Pharmacists and the Federal Council of Pharmacy launched a booklet entitled "Minimum standards for hospital pharmacy and health services", observing the need for a clinical pharmacokinetic service. In Brazil there are few hospitals that have this service in place [11].

We must consider that there are a number of effective drugs, but highly toxic, which have a narrow therapeutic margin and important pharmacokinetic variability. The concept of variability established by Dae ll [12] recognizes that for certain drugs, the only way of achieving a safe and effective dose for a patient is determining the plasma concentration of the drug. The individualized therapy requires therapeutic monitoring to obtain the desired clinical effects while minimizing adverse effects.

The clinical pharmacokinetics and therapeutic drug monitoring (TDM) involve not only the concentrations of drugs, but also the interpretation of clinical results. This requires knowledge of pharmacokinetics sampling time, the history of medicine and the clinical condition of the patient. Proper adjustment of doses can have a major impact on risk management and patient care. The objective of the TDM is to use appropriate concentrations of drugs difficult to manage to optimize clinical outcomes in patients in different clinical situations. The TDM programs are applied as a tool to monitor and avoid drug-related problems. They are mainly used in oral anticoagulants, antifungal, anticancer, immunosuppressant, antiepileptic drugs and psychiatric medications [13].

The main requisites for the TDM are drugs with wide inter individual pharmacokinetic variability; relations between systemic exposure and response (both toxicity and efficacy), and therapies requiring dose above the usual therapeutic window or with narrow therapeutic window.

In this context, the antineoplastic agents are usually characterized by a large inter individual variability in the pharmacokinetics, toxicity, and the relationship between systemic exposure and toxicity associated with exposure better than the dose or dose intensity. Clinical pharmacokinetics has been successfully applied to optimize anticancer treatments and antifungals [14,15].

Once implanted the Clinical Pharmacy at HCPA, we should improve it with the introduction of clinical pharmacokinetics, developing quality and safety indicators in order to optimize treatment in highly complexity governmental programs.

REFERENCES

1. Brook RH, McGlynn EA, Cleary PD. Measuring Quality of Care. N Engl J Med. 1996; 335: 966-970.
2. Lerer L, Insead. Quality and complexity in the health care sector: towards an inclusive model. Fontainebleau: INSEAD; 1999.
3. Crossing the Quality Chasm: A New Health System for the 21st Century. 2015.
4. Chassin MR, Loeb JM, Schmaltz SP, Wachter RM. Accountability Measures — Using Measurement to Promote Quality Improvement. N Engl J Med. 2010; 363: 683-688.
5. Donabedian A. The seven pillars of quality. Arch Pathol Lab Med. 1990; 114: 1115-1118.
6. Professional Standards for Hospital Pharmacy Services. 2014.
7. Bruchet N, Loewen P, Jane de Lemos. Improving the Quality of Clinical Pharmacy Services: A Process to Identify and Capture High-Value "Quality Actions". Can J Hosp Pharm. 2011; 64: 42-47.
8. Portaria Nº 529, De 1º abril e 2013.
9. Mahmud S, Martinbiancho JK, Zuckermann J, Santos L, Jacoby T. Pharmaceutical Assistance: Supporting Actions for Quality Assistance. 2006; 18.
10. Schumacher GE, Barr JT. Economic and outcome issues for therapeutic drug monitoring in medicine. Ther Drug monit. 1998; 20: 539-542.
11. Padrões Mínimos para Farmácia Hospital/Sociedade Brasileira de Farmácia Hospitalar. Goiânia. 2007; 20.
12. Dae il Kim, Mi Sun Im, Jin Hyoung Choi, Jina Lee, Eun Hwa Choi, Hoan Jong Lee, et al. Therapeutic monitoring of vancomycin according to initial dosing regimen in pediatric patients. Korean J Pediatr. 2010; 53: 1000-1005.
13. Ju-Seop Kang, Min-Ho Lee. Overview of Therapeutic Drug Monitoring. The Korean Journal of Intern Med. 2009; 24: 1-10.
14. Rousseau A, Marquet P. Application of pharmacokinetic modelling to the routine therapeutic drug monitoring of anticancer drugs.Fundam Clin Pharmacol. 2002; 16: 253-262.
15. Brüggemann RJM, Aarnoutse RE. Fundament and Prerequisites for the Application of an Antifungal TDM Service. Curr Fungal Infect Rep. 2015; 9: 122-129.

Cite this article

Zuckermann J, Martinbiancho JK, Mahmud SDP (2016) Clinical Pharmacy Quality and Safety Strategies. J Clin Pharm 2(1): 1010.