

Analysis of Essential Medicines Used for Emergency Care in Pakistan

Short Communication

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ABSTRACT

Introduction: According to the World Health Organization (WHO), essential medicines (EM) have the ability to meet the health care needs of maximum individuals. High accessibility to essential medicines (EM) was proposed under the Millennium Development Goal. The access to high quality, suitable, and inexpensive essential medicines is an essential constituent of health care systems.

Methodology: This retrospective cross-sectional observational study was performed at Jinnah Hospital Lahore from February 2018 to November 2018, for analysis of essential medicine usage in a public sector tertiary care hospital of Pakistan. The data were collected from records of patients admitted in the emergency department.

Results: Drugs prescribed per encounter were estimated to be 3. Most patients got a single antibiotic, and cephalosporin was the most commonly prescribed antibiotic.

Conclusion: The concept of essential drugs has gained high acceptance, but the EMs should be prescribed logically, appropriately and should be in line with WHO guidelines.

Keywords: *Essential Medicines, Emergency Health care, World Health organization*

INTRODUCTION

Essential Medicine concept, a revolution in healthcare, dawned in 1977 when the World Health Organization (WHO) published the first list of essential medicine (EM). EMs as per the updated definition of 2002, are "the medicines that satisfy the priority health care needs of the population". One of the major challenges faced by the National health care systems globally is the provision of suitable, reliable, equitable health services that are easily accessible to the majority of the population. High accessibility to EMs in third world countries was proposed under Millennium Development Goal 8. The World Health Organization's EM list furnishes countries with a plan of choosing financially savvy and top-notch drugs. At commencement, in 1977, the EMs were characterized as "medicines that are of utmost importance, and are basic, indispensable and necessary for the health needs of the population".^[3] EMs are chosen on the basis of the prevalence of the disease, safety, efficacy, and cost-effectiveness of the drug. As per WHO guidelines, they should have the ability to meet the health care needs of maximum individuals, should be quality assured and should be available at all times, in sufficient quantity, in proper dose at a price that is

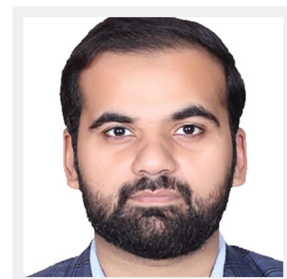
affordable for all.^[4] The ethical utilization of medicines is a critical determinant of the quality of healthcare services provided to patients and is crucial to the recovery of the patient.^[5]

The scope of critical health challenges being faced by third world countries is tremendous.

High prices of EMs make their universal availability a complicated issue and prudent use of EMs in public sector hospitals is a fact that is seldom stressed upon. The aim of this study was to assess the EMs prescribed in the Accidents and Emergency (A & E) department of the Jinnah Hospital, Lahore, Pakistan. The results of this study could support the hospital officials to formulate and enforce relevant interventions to augment the logical use of medications in the A & E department of the Jinnah Hospital Lahore which will not only be beneficial in financial terms but will also ensure the availability of EMs.

METHODOLOGY

This retrospective cross-sectional observational study was performed at the (A & E) of Jinnah Hospital Lahore. Our hospital is a 1500 bedded tertiary-care public sector



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doi:
10.5281/zenodo.3595077

Submission: Dec 19, 2019
Acceptance: Jan 31, 2020
Publication: Feb 1, 2020



teaching institute which caters to needs of a vast patient population from the urban and rural regions of central Punjab. The hospital records of patients admitted through the emergency department between February 2018 to November 2018, irrespective of age, gender and diagnosis were included. The prescribing indicators were defined according to literature.^[6] Following parameters were studied from patient files; the average number of drugs prescribed per encounter (standard 1.7–2.0), the drugs prescriptions by generic names (standard 100%), the percentage of antibiotic prescription (standard 20.0–26.8%), encounters when intravenous injections were used (standard 13.4–24.1%), EMs prescriptions (for which the standard is 100%). Continuous data are expressed as mean \pm S.D. Nominal data were expressed as percentages. No formal statistical hypothesis was tested.

RESULTS

The records of 2262 patients were accessed. Drugs prescribed per encounter were estimated to be 3.5 drugs per encounter. Medications endorsed by generic names were found out to be 89% (ideal worth 100%). Antibiotics were recommended 76.3% (ideal worth 20.0–26.8%) of the times. (ideal worth 13.4–24.1%). Out of 2262 patients, 1758 (77.7%) patients received single anti-biotic, 499 (22.1%) received two anti-biotics, and 5 (0.2%) received three anti-biotics. Cephalosporins were the most generally prescribed class of antibiotics (81.5%) trailed by penicillins (6.4%), fluoroquinolones (6.2%) and metronidazole (4.7%). Among the cephalosporins, ceftriaxone contributed the most being prescribed 71.8% of times followed by cefotaxime (5.6%) [Table 01].

DISCUSSION

The logical usage of EMs mandates that the patients receive medicines suitable to their clinical requirements, in accordance to their diagnosis, in a dosage that addresses their own personal requirements for the appropriate time, at the lowest possible cost to themselves, their community and the health care providers. The inappropriate, irrational use of EMs, especially antibiotics, is becoming a global problem. Our study showed that 76.3% of the patients received antibiotics in the A & E department. A study showed that one-third of patients visiting emergency departments received in-appropriate antibiotics prescription while in A & E.^[7] There are many weaknesses in pharmaceutical regulation such as quality assurance, lack of unified pricing, un-regulated prescriptions and weak supply management, which over-all cause, inappropriate prescriptions and non

Class of antibiotics	Frequency (%)
Cephalosporins	81.5
Penicillins	6.4
Flouroquinolones	6.2
Tetracyclines	1
Quinolones	5.9

Table 01: Most common drugs used in a Pakistani hospital

judicious use of EMs especially antibiotics.^[8,9] In our study, the number of medications recommended per encounter was more than 3, which is not in accordance with the standard practice of 2–3 medication per encounter.^[3,6,10] Majority of subjects were prescribed medicine with generic names which are in accordance with standard norms.

CONCLUSION

The concept of essential drugs, which was put forward in 1977, has gained high acceptance as a rational approach of rendering advanced, commercial and evidence-based health care. EMs should be prescribed logically, appropriately and should be in line with WHO guidelines. Appropriate use of EMs not only ensures there round the clock availability but also reduces financial strain on the public sector hospitals.

REFERENCES

1. Wertheimer AI, Santella TM. Innovation and the WHO's essential medicines list: giving credit where credit is due. *Res Social Adm Pharm.* 2007;3(1):137–144. Available from: doi:10.1016/j.sapharm.2006.05.006.
2. Gotham D, Onarheim KH, Barber MJ. How the MDGs gave up on measuring access to medicines. *Lancet Glob Health.* 2016;4(5):e296-7. Available from: doi: 10.1016/S2214-109X(16)00066-8.
3. The selection and use of essential medicines. Report of the WHO Expert Committee, 2002 (including the 12th Model list of essential medicines). *World Health Organ Tech Rep Ser.* 2003;914:i-vi, 1-126.
4. Najmi MH, Hafiz RA, Khan I, Fazli FR (1998) Prescribing practices: an overview of three teaching hospitals in Pakistan. *J Pak Med Assoc* 48: 73–77.
5. Butt ZA, Gilani AH, Nanan D, Sheikh AL, White F. Quality of pharmacies in Pakistan: a cross-sectional survey. *Int J Qual Health Care.* 2005;17(4):307-13. Available from: doi: 10.1093/intqhc/mzi049.
6. Desalegn AA. Assessment of drug use pattern using WHO prescribing indicators at Hawassa University Teaching and Referral Hospital, south Ethiopia: a cross-sectional study. *BMC Health Serv Res.* 2013;13:170. Available from: doi: 10.1186/1472-6963-13-170.
7. Denny KJ, Gartside JG, Alcorn K, Cross JW, Maloney S, Keijzers G. Appropriateness of antibiotic prescribing in the Emergency Department. *J Antimicrob Chemother.* 2019;74(2):515-520. doi: 10.1093/jac/dky447.
8. Rabbani F, Cheema FH, Talati N, Siddiqui S, Syed S, Bashir S, Zuberi LZ, Shamim A, Mumtaz Q. Behind the counter: pharmacies and dispensing patterns of pharmacy attendants in Karachi. *J Pak Med Assoc.* 2001;51(4):149-53.
9. Nishtar S. Pharmaceuticals--strategic considerations in health reforms in Pakistan. *J Pak Med Assoc.* 2006;56(12 Suppl 4):S100–S111.
10. Sturm AW, van der Pol R, Smits AJ, van Hellemond

FM, Mouton SW, Jamil B, Minai AM, Sampers GH. Over-the-counter availability of antimicrobial agents, self-medication and patterns of resistance in Karachi, Pakistan. J Antimicrob Chemother. 1997;39(4):543-7. Available from: doi: 10.1093/jac/39.4.543.

CONFLICT OF INTEREST

The Authors declared no conflicts of interest.

HOW TO CITE

Khalid T, Khokhar A, Jahan N, Sultan U, Fatima A. Analysis of essential medicines used for emergency care in Pakistan. Pak J Surg Med. 2020;1(1):75-77. doi: 10.5281/zenodo.3595077.

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