Original article

Presentation, prescription pattern and time taken to discharge from an Emergency Department of Eastern Nepal

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Abstract

Background: It is a great challenge for a doctor to give proper care and discharge because of overcrowding in emergency units like ours. The clinical records in emergency are an essential document that reflects the quality of care which is given to the patient. **Objectives:** To find out the time taken for discharge from emergency and to find out the current trend of problems presenting to emergency and their prescription pattern. **Methods:** A retrospective descriptive hospital based study was carried out using all emergency discharged patients' case sheet records from 14th April to 14th May 2013. A number of 1022 files were analyzed. **Results:** Out of 1022 discharge files, majority (72%) of the patients included Australian Triage Score (ATS) 3. Patients with ATS 5 had a mean duration of stay of 24 hours whereas ATS 2, 3, 4 patients had mean duration of stay of 10.10 hours, 8.75 hours and 5.48 hours respectively. Most common clinical presentation was trauma (31.3%).Out of 1022 patients, 504 (49%) were treated with antibiotics. Cefixime was the most frequently administered antibiotics (24.7%). Of all 506 patients received analgesic, mostly diclofenac (30.8%), 79 received antispasmodic drugs, mostly hyoscine butyl bromide (6.2%), and antipyretics mostly paracetamol. Proton pump inhibitors (PPI) were used in 594 (58.1%) patients mostly pantoprazole (47.2%) **Conclusion:** Sicker patients had longer duration of stay in the emergency unit. Trauma is the most common presentation, analysis, antibiotics and PPL are the most commonly prescribed which show in the emergency unit.

Keywords: ATS scoring, clinical presentation, emergency department, prescription patterns.

Introduction

Prescription pattern and time to discharge from emergency department is an important part of quality assessment tool that is used to increase the efficiency of the working of emergency department. The prescription pattern is an effective tool to understand the trend of changing practice and can have economic explanation. The time of discharge from emergency act as an indicator of the burden of patient flow in emergency and the problem of overcrowding in emergency. The coordination of care, both interdepartmental and intradepartmental affect the time of discharge and the quality of care the patient receives. Despite the importance of the clinical records in emergency, there has been relatively little research in this area in Nepal.

Similarly, the clinical record keeping is the only form of communication that accompanies the patient to the next setting of care.[3] The clinical record and prescription written by the attending physician are used to summarize the events of a hospitalization. The record summarizes the admitting diagnosis, therapy received while

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in emergency, clinical course, prognosis, and plan of action upon the patient's discharge with stated time to follow-up.[1]

Drug utilization reviews are useful for obtaining information about drug use patterns and for identifying high cost drugs [10].

Irrational and inappropriate use of drugs is a major concern in both developed and developing countries[11, 12]. The cost of irrational use of medicines is enormous in terms of scarce resources and the adverse clinical consequences of therapies that may have real risks but no objective benefits. Lack of information can lead to poor continuity of care, resulting in an unnecessary duplication of consultations or investigations, poly-pharmacy, iatrogenic errors, a worsening of the health condition, patient dissatisfaction, and a subsequent loss of confidence in the medical team and physician[4,5] Poor discharges can also lead to inefficient care and inappropriate utilization of health care resources.

Standardized, consistent discharge summary can be a key factor in improving the quality of patient care. Established components that each hospital discharge summary should contain include reason for hospitalization, significant findings, procedures and treatment provided, patient's discharge condition, patient and family instructions (as appropriate), attending physician's signature.

Therefore, the present study has been designed to find out trends of presentations, prescriptions and discharge in the emergency unit of BPKIHS.

Methods

The study is a retrospective descriptive hospital based study, carried out using all emergency discharged patients' case sheet record in Medical Record Department of BPKIHS Dharan; Nepal from February 2013 to January 2014.

A case file analysis was done based on a proforma developed by the researchers. The discharge summaries were evaluated for the presence or absence of the following key items:

Age, sex, Address, date and time of admission and discharge, duration of emergency ward stay, triage score (1,2,3,4,5), Clinical presentation, prescription pattern, name of drugs, number of drugs, physical examination, admission diagnosis, discharge diagnosis, discharge medication (including dose and duration)/instruction, consultation, follow-up arrangements, time taken from triage to doctor intervention, time taken to discharge, condition at discharge, structured of file, doctor identified, remarks in form of discharge, discharge on patient's request, leave against medical advice referred etc.

The files were evaluated by at least two of the researchers to minimise inter observer bias. The data was entered in Microsoft Excel 2007 and exported to SPSS 11.5 for statistical analysis. Data were tabulated and interpreted in form of percentage, mean, standard deviation (SD). For descriptive analysis rates, proportions, percentage, mean, standard deviation (SD) were calculated and also graphical and tabular presentation was made.

For inferential analysis chi square and t-test was applied to find out the association between outcome variable and other related variables at the level of significance p=0.05.

Results

Demographic Parameters

Out of 1022 discharge file, females were 429 (42%) and male were 593 (58%).Mean age was 34.56 (SD ± 23.36) years with range of (.003-99.00). Of all, 576 (56.4%) patients were from Sunsari District and 446 (43.6) were from other districts. Age distribution is given in Fig. 1.

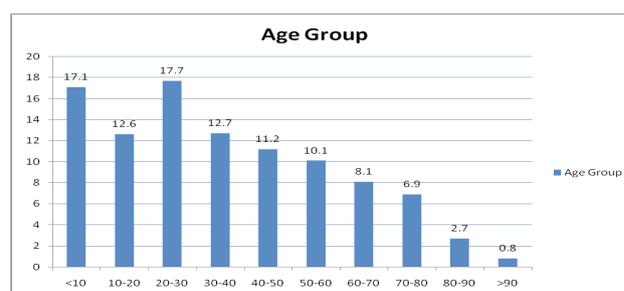Predominant age group is 20- 70 years which is approximately 72%

Figure 1: Age distribution of the patients

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Australian Triage Score (ATS)

Most of the patients included were in ATS 3 (72%) and ATS 4 (17.9%) which comprises approximately 90% whereas ATS 2 were 9.5% and ATS 5 were 0.6%.

Table 1: Duration of stay of patients with different ATS (Mean ± SD)

ATS	N	Mean in hours	Std. Deviation
2	50	10.10	8.853
3	458	8.75	8.840
4	79	5.48	6.441
5	1	24.00	.
Total	588	8.45	8.649

Clinical presentation

Most common presentation was trauma (31.3%) whereas abdominal Pain (21.5%), fever, vomiting, loose motion (7.6%) etc. shown table no.2

Table 2: Distribution of common clinical presentations

	Frequency	Percent
Trauma	320	31.3
Abdominal pain	220	21.5
Fever, vomiting, loose motion	78	7.6
Chest pain	58	5.7
Fever & cough	58	5.7
Headache & vomiting	46	4.5
Abnormal body movement	34	3.3
Bleeding	28	2.7
Loss of consciousness	25	2.4
Joint pain	17	1.7
Retention of urine	14	1.4

Musculo-skeletal system (MSK) was the principal system involved is 34.5%, gastrointestinal tract (GI) is 31.7%, Central nervous system (CNS) is 11.2% (table 3)

Table 3: Distribution of principal system involved

	Frequency	Percent
Musculo-skeletal system (MSK)	353	34.5
Gastrointestinal tract(GI)	324	31.7
Central nervous system (CNS)	114	11.2
Respiratory system(RSP)	85	8.3
Cardiovascular system(CVS)	58	5.7
Genito-urinary system(GU)	28	2.7
Hematological	28	2.7

Out of 1022 patients, 504 (49%) were treated with antibiotics. The common antibiotics were cefixime (24.7%), cloxacillin (7.5%), and amoxicillin +clavaulinic acid (5.6%) as (table 4)

Table 4 : Antibiotics prescribed in the emergency unit

	Frequency	Percent	Valid percent	Cumulative percent
Cefixim	253	24.7	24.7	76.6
Cloxacillin	77	7.5	7.5	86.4
Amoxy clavalunic	57	5.6	5.6	56.6
Ofloxacin	48	4.7	4.7	92.0
Azithromycin	19	1.9	1.9	59.6
Ciprofloxacin	18	1.8	1.8	78.8
Amoxycillin	6	.6	.6	57.7

Regarding analgesia, 506 patients received analgesics, mostly diclofenac (30.8%, paracetamol + ibuprofen (15.3%) and tramadol (2.0%) (tables 5)

Table 5 : Distribution of analysis, antipyretics, antispasmodics and proton pump prescribed

Drug prescribed	Frequency	Percentage
Analgesic		
- Diclofenac	315	30.8
- (Flexon) paracetamol + ibuprofen	156	15.3
- Mefenamic acid	3	.3
- Paracitamol + codeine	3	.3
Antipyretics		
- Paracetamol	123	12
- Paracetamol + ibuprofen	2	.2
Antispasmodics		
- Hyoscine butabromide	63	6.2
- Drotaverin	3	.3
Proton pump inhibitor		
- Pantoprazole	482	47.2
- Rabeprazole	59	5.8
- Ranitidine	41	4.0

Regarding antispasmodic, 79 patients received antispasmodic drugs, mostly hyoscine butyl bromide (6.2%), and antipyretics were mostly Paracetamol as shown in tables 5.

Antipyretics used was mostly paracetamol. Proton pump inhibitor (PPI) were prescribed 594 (58.1%) in patients mostly pantoprazole (47.2%).Doctor identified while analyzing

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structure of the discharge file 78.6% were partially structured, 19.4% were fully structured and 2.1% were unstructured.

Most (95.9%) of discharged file had diagnoses mentioned. While analyzing discharge status, 86.3% were discharged, 4.5% had discharge on persistent request (DOPR), 7.1% were referred to other centres, 1.4% left against medical advice (LAMA) and 0.7% absconded.

Discussion

This study provides information on the present trend of problems presenting to emergency, prescription pattern and an idea about the time taken for disposition of the patients from the emergency.

Prescription pattern and time to discharge from emergency form an important part of quality assessment tool that can used to increase the efficiency of the working of emergency department. The prescription pattern can further be an effective tool to understand the trend of changing practice and can have economic explanation.

The time of discharge from emergency can act as an indicator to the burden of patient flow in emergency and the problem of overcrowding in emergency. The coordination of care, both interdepartmental and intradepartmental can affect the time of discharge and the quality of care the patient receives. This project aims to touch these areas and help in formulation of strategies to improve care in emergency.

Despite the importance of the clinical records in emergency, there has been relatively little research in this area in Nepal. Our country often fails to have a systematic approach to liaison between the hospital and patient's primary care practitioner. The clinical records in emergency are an essential document. It might be the only form of communication that accompanies the patient to the next setting of care.

In this study, the mean age was 34.56 (SD 23.36) with range of (.003-99.00) as compare to other study.

According to our study the mean duration of stay was 24 hours for patients with ATS 5 whereas ATS 2, 3, 4 had mean duration of stay 10.10 hours, 8.75 hours and 5.48 hours respectively which is far more than the study done by Jeffry et al and is contradictory to the norms of our emergency department.

The most common presentation in our study was trauma (31.3%) abdominal Pain (21.5%), and fever, vomiting, loose motion (7.6%).

In our study 49% of patients were prescribed antibiotics whereas in similar study done in family medicine department of Nigeria, nearly 42% were prescribed antibiotic. Among the various antibiotics which were prescribed, 35.83% were quinolones and 26.29% were penicillin. Where as in our study the most common antibiotics prescribed was cefixime (24.7%), Cloxacillin (7.5%) and Amoxy-Clav (5.6%).

The antibiotic combination pattern showed that 44.44% were given a combination of amoxicillin and metronidazole and that 21.47% were given a combination of amoxicillin, metronidazole and doxycycline. Spanish study showed use of antibiotic prescription in acute respiratory infections that_antibiotic was prescribed in 82.6% of these, The most commonly used antibiotics were amoxicillin-clavulanate and cefuroxime Global percentage of inappropriate prescription was 40.5%. The prescriptions were inappropriate in 16.9% of cases of pharyngotonsillitis, 17.8% of chronic bronchitis, 26.9% of acute bronchitis, 29.3% of pneumonias, 30.8% of otitis and sinusitis and in 70.8% of croup, flu, common cold and non-specified infections.

Another study done in a teaching hospital in western Nepal showed that Antibiotics were prescribed in 26.4% .Among prescribed drugs, Amoxicillin, Cetirizine, vitamins, the combination of paracetamol and ibuprofen and ranitidine were most commonly prescribed. Regarding the disease distribution, respiratory tract infections and acid peptic disease were

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the common illnesses. Generic prescribing was low. Some of the drug combinations being used were irrational.

Another similar study done by Malla et al, showed that antibiotic prescription pattern for viral respiratory illness in emergency room and ambulatory care settings showed that the antibiotic prescription rate was 30%. The prescription rate was 3.7 times higher for bronchitis patients and 2.5 times higher for viral pharyngitis patients than for common cold patients. Antibiotics were written more by emergency physicians and family practitioners than by pediatricians.

Conclusion

Sicker patients had longer duration of stay in the emergency unit. Trauma is the most common presentation, analysis, antibiotics and PPL are the most commonly prescribed which show in the emergency unit.

References

1. McGraw-Hill Concise Dictionary of Modern Medicine. 2002 by The McGraw-Hill Companies, Inc.). Available at: http://www.thefreedictionary.com/sources.htm. Accessed Jan 2012.

2. World Health Organization. Introduction to drug utilization research. Oslo: 2003.

3. Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: Implications for patient safety and continuity of care. JAMA 2007; 297: 831-841.

4. Piterman L, Koritsas S: Part II. General practitioner-specialist referral process. Intern Med J 2005, 35(8):491-496.

5. Kravitz RL, Reuben DB, Davis JW, Mitchell A, Hemmerling K, Kington RS, Siu AL: Geriatric home assessment after hospital discharge. J Am GeriatrSoc 1994, 42(12):1229-1234.

6. Uppal R, Nayak P, Sharma PL. Prescribing trends in internal medicine. Int J Clin Pharm TherToxicol. 1984; 22:373–376.

7. Jeffrey L. Greenwald, MD, Charles R. et al. The Hospital Discharge: A Review of a High Risk Care Transition with Highlights of a Reengineered Discharge Process. Journal of Patient Saf. Volume 3, Number 2, June 2007.

8. Krishnaswamy K, Dinesh Kumar B, Radhaiah G. A drug use survey- precepts and practice. Eur J ClinPharmacol. 1985; 29:363–370. [PubMed]

9. Pradhan SC, Shewade DG, Shashindran CH, Bapna JS. Drug utilization studies. National Med J India. 1988; 1:185–189.

10. Marshner JP, Thurmann P, Harder S, Rietbrock N. Drug utilization review on a surgical intensive care unit. Int J ClinPharmacolTher. 1994; 32:447–451. [PubMed]

11. Hogerzeil HV. Promoting rational prescribing: an international perspective.Br J ClinPharmacol. 1995; 39:1–6. [PMC free article] [PubMed]

12. Joshi MP. Rational prescribing. In: Joshi MP, Adhikari RK, eds. Manual of drugs and therapeutics. Kathmandu: Health Learning Materials Centre 1996:1–

13. Joint Comission on the Accreditation of Healthcare Organizations. Standard IM.6.10, EP 7 Website. Available at: http://www.jointcommission.org/NR/rdonlyres/A9E4F954-F6B5-4B2D-9ECF-C1E792BF390A/0/D_CurrenttoRevised_DC_HAP.pdf. Accessed FEB, 2012.

14. Ahmed MN, Muyot MM, Begum S, Smith P, Little C, Windemuller FJ. Antibiotic Prescription Pattern for Viral Respiratory Illness in Emergency Room and Ambulatory Care Settings. Clinical Pediatrics 2010; 49(6): 542-547.

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15. Molstad S, Ekedahl A, Hovelius B, Thomansson H. Antibiotics prescription in primary care: a 5-year follow-up of an educational program. Fam. Pract. 1994; 11: 282-286.

16. Gonzales R, Maselli J, Sande MA. Trends in antimicrobial treatment of acute respiratory tract infections by United States primary care physicians, 1994-1999. J Gen Intern Med. 2001; 16 (suppl): 196-197.

17. Gonzales R, Malone DC, Maselli JH, Sande MA. Excessive antibiotic use for acute respiratory infections in the United States. Clin Infect Dis. 2001; 33: 757-762

18. Norberto K, Wissam A, Yaron B, Salim H. Antibiotic prescription and cost pattern in a general intensive care unit. Pharmacy Practice. 2007; 5(2): 67-73.

19. Bergman U, Popa C, Tomson Y, Wettermark B, Einarson TR, Aberg H, Sjoqvist F. Drug Utilization 90% - A simple method for assessing the quality of drug prescribing. Eur J Clin Pharmacol 1998; 54: 113-8.

20. Upadhyay DK, Palaian S, Ravi Shankar P, Mishra P, Sah AK. Prescribing pattern in diabetic outpatients in tertiary care teaching hospital in Nepal. Journal of Clinical and Diagnostic Research 2007; 1(4): 248-255.

21. Palikhe N. Prescribing Pattern of Antibiotics in Paediatric Hospital of Kathmandu Valley. Kathmandu University Medical Journal. 2004; 2(1):6-12

22. Lindbaek M, Berild D, Straand J, Hjortdahl P. Influence of prescription patterns in general practice on anti-microbial resistance in Norway. British Journal of General Practice 1999; 49: 436-440.