Review Article

Disease Pattern, Morbidity Indicators in a Tertiary Care Center of a Developing Country

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Abstract

Background: Infectious diseases are a common cause of hospital admission in developing countries. Communicable diseases are the main reasons for admission to the medical ward of developing countries. However, there is a rise in the prevalence of the non-communicable diseases in the developing countries.

Objectives:
Primary objective: To see the trend of disease pattern admitted in the Internal Medicine ward of BPKIHS in the last 5 yrs. To know the common causes of hospital admissions in Internal Medicine ward.

Secondary objective: To analyse the rise and fall of diseases in certain year. To classify the diseases as communicable and non-communicable disease and to know about the changing pattern of disease.

Methods: A retrospective observational study was performed to estimate the disease burden in the Internal medicine ward of BPKIHS in last 5 years. Data were obtained from the account section of BPKIHS and included patients admitted to the medicine ward from January 2008 to December 2012. Data entry was done in Microsoft excel, and data were analyzed using SPSS. Results were presented in both descriptive and tabular form.

Results: The main system involved was respiratory (in 2008-21.6%, in 2009-21.4%, in 2010-19.3%, in 2011-18.2%), COPD and Diabetes were among the top 10 diseases admitted in medicine ward. (COPD= in 2008-7.3%, in 2009-6%, in 2010-6%, in 2011-5.8%, in 2012-4.6%) (Diabetes in 2008-6.1%, in 2009-5.9%, in 2010-5.3%, in 2011-4.7%, in 2012-3%) The cases of poisoning have been increasing every year, with the maximum cases of it in the year 2012 i.e. 21% and initially in 2008 it was 10%. The most common diseases, according to our study were COPD, Diabetes, Nephritic syndrome, Poisoning, Pneumonia, angina, Tuberculosis.

Conclusion: The main cause of morbidity was organophosphorus poisoning and the main system responsible was Respiratory followed by CVS, Poisoning. The cases for respiratory system have been declining since 2008. Poisoning cases have increased since 2008. Endocrine disorders have been to be decreasing since 2008.

ABBREVIATIONS
NCD: Non Communicable Disease; COPD: Chronic Obstructive Pulmonary Disease

INTRODUCTION

Disease burden is the impact of a health problem as measured by financial cost, mortality, morbidity or other indicators [1]. It includes the diseases which are responsible for patients seeking for any medical help. The diseases can be classified mainly as communicable diseases and noncommunicable diseases. These diseases can affect different systems like respiratory, cardiovascular, gastrointestinal, Nervous, Musculoskeletal, etc.

It is believed that the pattern of medical diseases in developing countries is different than the developed countries [2]. Chronic diseases such as cardiovascular, primarily heart disease, stroke, cancer and diabetes are the most common cause of health problem worldwide [2] (Figure 1-7). But developing countries like ours are still struggling with the communicable diseases [2]. However the trend of diseases is shifting from communicable to non communicable diseases. This study is important as it is the large epidemiological one, particularly in this part of the world. Hence an attempt has been made to study the disease pattern among the admitted patients in Internal Medicine ward in a tertiary care center.

Presumably, the prevailing ailments in the society is said to determine the trend in hospital admissions which will also give an overview of the health status of the community. Therefore, hospitalization often gives an idea of the dynamics in disease pattern in a community, although, the precise prevalence of such might not be determined. This insight is important for planning, policy formulation and eventually will determine the allocation of resources for health services, research and training. Information in this regard is often lacking, especially in developing countries, which would have been helpful in the proper distribution of the meager resources allocated to healthcare in such setting. Lately,
the drift towards non-communicable diseases (NCD) as the leading cause of medical admission in developing countries due to epidemiological transition have been highlighted, however the communicable diseases (CD) still account for a bulk of patients by virtue of its high burden in the developing countries [3].

BACKGROUND

World scenario

Noncommunicable diseases (NCDs) are the leading causes of death globally, killing more people each year than all other causes combined [4] (Figures 8-12).

Non-communicable Diseases (NCD) principally include four common diseases, viz. Diabetes, cardiovascular diseases (CVD), cancers and chronic respiratory diseases, which caused 63% of global deaths in 2008. NCD now account for more than one-half of the global burden of disease. Cardiovascular diseases account for about one-half of NCD deaths, and the majority of cardiovascular disease deaths occur in low- and middle-income countries [5]. Many low and middle-income countries are experiencing colliding epidemics of chronic infectious (ID) and non-communicable diseases [6]. According to GBD analyses, the rise of NCD is in part due to increased life expectancy due to reduced premature mortality from communicable, child, and maternal illnesses, but preventable risk factors also contribute and present targets for NCD control efforts. In addition to traditional NCD risk factors, like tobacco smoking, high blood pressure, and unhealthful diet, nontraditional risk factors like air pollution and unhealthful alcohol consumption also play a role [5]. Burden of noncommunicable diseases is higher in developed countries. Whereas communicable diseases is higher in developing countries (Figures 13-19).
Scenario in developing countries

Infectious diseases are a common cause of hospital admission in developing countries [7]. Communicable diseases are the main reasons for admission to the medical ward of developing countries [8]. However, there is a rise in the prevalence of the non-communicable diseases in the developing countries. In a study in a developing country, 30.8% were cases were due to gastrointestinal problems. Infections diseases accounted for the most admissions (44.3%), mainly gastroenteritis (24.4%) [8]. In India suicide is the leading cause of death in people aged 15-29 years [9].

Scenario in Nepal

The hospital based NCD prevalence was 31%. Chronic obstructive pulmonary disease (43%) was the most common NCD followed by cardiovascular disease (40%), diabetes mellitus (12%) and cancer (5%) [10].

36.5% of admitted patients suffered from NCD out of which 38% were having heart diseases followed by chronic obstructive pulmonary diseases (33%) and diabetes and cancer (29%) [11].
The most common affected system was respiratory system 31.73%, followed by gastrointestinal, including liver 18.64%, cardiovascular 11.34%, genitourinary 12.01%, neurology 9.23%, endocrine 4.80%. COPD is a major contributor to the disease in regions such as Nepal and rural India and Pakistan [12].

METHOD AND METHODOLOGY

Study design: Observational Study

Setting: The study was conducted in the Internal Medicine, Department of BPKIHS, Dharan, Nepal.

Sample size: Patient who were admitted in Internal Medicine ward of BPKIHS in last 5 years.

Figures

Duration of study: 15th April 2014 to 13th May 2014.

Methodology

The study was conducted by 3rd year MBBS students (BATCH-2011) under department of Internal Medicine, BPKIHS, Dharan, Nepal.

Study includes data from Jan 2008 to December 2012. A letter was written to Department of Internal medicine for the use of record for research.
Written informed consent was obtained from them prior to study which will be approved by research and ethics committee of the college.

**Statistical analysis**

Entry of data obtained was done in Microsoft excel 2010, and data was analyzed using SPSS 17.0 version.

Results was presented in both descriptive and tabular form.

**DISCUSSION AND CONCLUSION**

This study was conducted in the patients admitted to medicine ward of BPKIHS since January 2008 to December 2012.

In a study done by B.R. Pokharel et al. in Kathmandu University School of Medical Sciences, Dhalikhel, Katre, the most common affected system was respiratory system 31.73%. And in our study also the main system involved was respiratory (in 2008-21.6%, in 2009-21.4%, in 2010-19.3%, in 2011-18.2%) (Table 1).

In a study done by Gajananda Prakash Bhandari et al., in Nepal, Chronic obstructive pulmonary disease (43%) was the most common NCD followed by cardiovascular disease (40%), diabetes mellitus (12%). In our study, COPD and Diabetes were among the top 10 diseases admitted in medicine ward. (COPD=in 2008-7.3%, in 2009-6%, in 2010-6%, in 2011-5.8%, in 2012-4.6%) (Diabetes in 2008-6.1%, in 2009-5.9%, in 2010-5.3%, in 2011-4.7%, in 2012-3%).

In a study done in St. Rita’s hospital in the rural Northern Province of South Africa, the six most common diseases were hypertension, pulmonary tuberculosis, gastroenteritis, pneumonia, diabetes and asthma, whereas the common diseases, according to our study were COPD, Diabetes, Nephritic syndrome, Poisoning, Pneumonia, angina, Tuberculosis.

The cases of poisoning are increasing every year, with maximum cases of it in the year 2012 i.e. 21% and initially in 2008 it was 10%.

In a study done by Ogunmola OJ, Oladosu OY in Department of Internal Medicine, Federal Medical Centre, Ido-Ekiti, Ekiti State, Nigeria, disorders of the cardiovascular system topped the admission list (32.1%) in general, and noncommunicable diseases were also predominant (68.4%) on the admission list compared with communicable diseases (31.6%). The most common cause of death was cardiovascular diseases (33.0%).

Hence, the findings observed in the present study point toward an urgent need of increasing awareness among the population and also developing the medical facilities to address the increasing burden of these diseases.

**RESULTS**

Total No. of cases reported was 24005
REFERENCES


