The etiology of fever in patients presented at KIST Medical College, Teaching Hospital, Lalitpur, Nepal

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ABSTRACT

In Nepal, febrile illness is one of the most common reasons for seeking medical attention, but there is limited information on the frequency of specific etiology of fever. This is a retrospective study. Patients presented with fever admitted in medicine ward and Intensive care unit of KIST Medical College, Imadol, Lalitpur from January 2010 to January 2012 are included in the study. Of the 898 patients enrolled, 23.5% had infective exacerbation of COPD. Enteric fever, urinary tract infection, acute gastroenteritis, tuberculosis and community acquired pneumonia were the cause of fever in 20%, 13%, 10%, 7.3% and 6% cases of respectively. Findings confirm the heavy burden of infection was a cause of fever requiring hospitalization. This highlights the importance of simple diagnostic tests and cost effective treatment required to manage these patients.

Keywords: Febrile illness, health problem, infections.

INTRODUCTION

Febrile illnesses are public health challenge where clinical diagnosis is a common practice and diagnostic facilities are scarce.[1] Clinical diagnosis lacks specificity as febrile illness may be clinically indistinguisible and results in classification errors. This leads to misdiagnosis and mis-treatment without solving the root cause of the problem. Acute febrile illness is a common reason for seeking medical care in Nepal. However, with a general unavailability of diagnostic tests, cases are frequently treated empirically with the underlying illness remaining undiagnosed .[2] The determination of accurate year-round epidemiologic data for febrile patients and information regarding predominant symptoms for different diseases will assist clinicians in their diagnoses and subsequent therapeutic interventions even when laboratory resources are lacking. Sentinel hospital-based studies performed over defined periods of time have provided useful clinical and public health information in countries that lack resources for long-term routine diagnostic testing .[3]

In Nepal, febrile illness is one of the most common reasons for seeking medical attention, but there is limited information on the frequency of specific etiology of fever. While the burden of some infectious causes (e.g., viral illness, enteric fever) is believed to be substantial, the importance of infectious as well as noninfectious etiologies is undefined. The provision of accurate epidemiologic data for common causes of fever will enable resources to be directed towards key areas and will be of practical importance to clinicians. We conducted a retrospective study to assess the various etiologies of fever in adults with fever presented to KIST medical college hospital.

MATERIALS AND METHODS

Retrospective study involving all patients presented with fever admitted in Medicine ward and Intensive Care Unit of KIST Medical College, Imadol, Lalitpur from January 2010 to January 2012 was done. All patients of 14 years and above with fever as a chief complaint irrespective of the underlying etiology were included in the study. Documentation of fever was based on patient's clinical history of self temperature recording or recording during hospital admission. All patients presented with fever as a chief complaint were analyzed from the discharge record and monthly audit record. Once inclusion criteria were confirmed, diseases spectrum as etiology of fever was analyzed.

RESULTS

During the two years study (January 2010 to January 2012) periods, 898 febrile adults were enrolled. Details are given in Table-1, 2 and Fig 1.

Among admitted patients, the predominant occupational groups were housewives (35%), farmers (30%), and vendors and merchants (10%), manual workers 8%, students (5%), others (12%). Most patients were from surrounding locality of Kist Medical College and adjacent areas of Kathmandu Valley, with approximately 15% of the patients coming from the Terai and different hilly districts. Infective exacerbations of COPD, enteric fever, urinary tract infection, tuberculosis and community acquired pneumonia were the most common initial clinical diagnosis. Chest infections were more common in patients with already existing structural lungs disease like COPD (23.5%), post TB fibrosis or bronchiectasis

Table-1: Clinical characteristics of patients hospitalized with fever in KIST Medical College Teaching Hospital

Total admission	1820
Age (years), median (range)	14-90 years
Female	55%
Average admission rate	2.5/day
Patients with febrile illness	898 (49.3%)
Housewives	314(35%)
Farmers	269(30%)
Vendors and merchants	89 (10%)
Manual workers (for daily wages)	71(8%)
Students	44(5%)
Others	107(12%)

(4.3%) etc. Tuberculosis (7.3%) contributed significant number of chest infections as a cause of fever. Urinary tract infection (13%) was another important cause of febrile illness which was more common in female and diabetic patients. Gastrointestinal problems [acute gastroenteritis (10%) and dysentery (2.8%)] also played a important role as cause of fever. Less common causes of febrile illness were connective tissue disorders, infectious etiologies like Brucellosis (8%), Leptospirosis (5%), malaria (0.4%), kala-azar (0.3%), malignancy like lymphoma(0.5%) leukemia (0.2%) etc.

DISCUSSION

This is a study to systematically examine the various causes of febrile illness in Nepal. Respiratory tract infections, enteric fever and urinary tract infections were the most common initial clinical diagnosis. Respiratory tract infections are the leading cause of the global burden of disease accounting for more than 6% of worldwide disease and mortality in developing countries.[4,5] Chest infection were the most common clinical diagnosis in our patient population which were more common in patients underlying COPD, post tubercular fibrosis and bronchiectasis. Respiratory tract infection being responsible for approximately half of COPD exacerbations. Approximately half of these are due to viral infections and another half appears to be caused by bacterial infections.[6] Given that sputum culture was not routinely performed, we have limited insight into the complete spectrum of pathogens. Chest infection diagnosis was made with clinical, laboratory, and radio-graphic changes.

Enteric fever is well-recognized as an important cause of febrile illness in Nepal.[7,8] Although antibiotics have markedly reduced the frequency of typhoid fever in the developed world, it remains endemic in developing countries.[9] Our study revealed the enteric fever as second most common of febrile illness which included both culture positive and negative cases. Culture negative cases were presumed to be enteric fever based on clinical and laboratory findings and response to antimicrobial therapy.

Tuberculosis (TB) is a major public health program in Nepal. Data from the National Tuberculosis Program of Nepal shows that there are more than 30,000 infectious cases and 5,000-7,000 deaths due to TB annually.[10,11] It is the most common cause of death in the most economically productive age group comprising adults aged 15 to 49 years.[12] Extrapulmonary tuberculosis has become more common since the advent of human immunodeficiency virus (HIV) infection.[13] This study revealed significant number of pulmonary tuberculosis patients who presented with febrile illness. Extrapulmonary TB patients presented with other constitutional symptoms rather than febrile illness.

People experiencing an upper urinary tract infection (UTI), or pyelonephritis, may experience flank pain, fever or nausea and vomiting in addition to the classic symptoms of a lower UTI.[14] Urinary tract symptoms may be lacking in the elderly.[15] In our study, UTI was important cause of febrile illness which was more common in female and elderly patients and patients with diabetes mellitus.

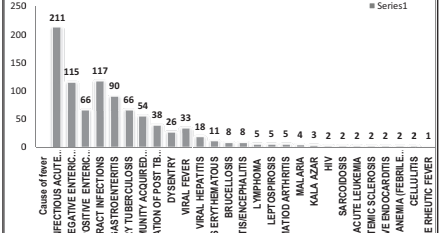

Fig. 1. Diagnosis made during admission

Table 2: Diagnosis made during admission

Infectious Acute Exacerbation Of Copd	211	(23.5%)
Culture Negative Enteric Fever	115	(12.8%)
Culture Positive Enteric Fever	66	(7.3%)
Urinary Tract Infections	117	(13%)
Acute Gastroenteritis	90	(10%)
Pulmonary Tuberculosis	66	(7.3%)
Community Acquired Pneumonia	54	(6%)
Exacerbation Of Post Tb Fibrosis/ Bronchiectasis	38	(4.2%)
Dysentry	26	(2.8%)
Viral Fever	33	(3.6%)
Viral Hepatitis	18	(2%)
Systemic Lupus Erythematous	11	(1.2%)
Brucellosis	8	(0.8%)
Meningitis/Encephalitis	8	(0.8%)
Lymphoma	5	(0.5%)
Leptospirosis	5	(0.5%)
Rheumatiod Arthritis	5	(0.5%)
Malaria	4	(0.4%)
Kala Azar	3	(0.3%)
Hiv	2	(0.2%)
Sarcoidosis	2	(0.2%)
Acute Leukemia	2	(0.2%)
Systemic Sclerosis	2	(0.2%)
Infective Endocarditis	2	(0.2%)
Aplastic Anemia (Febrile Neutropenia)	2	(0.2%)
Cellulitis	2	(0.2%)
Acute Rheutic Fever	1	(0.1%)

Our results may underestimate the true burden for several reasons. Firstly, our hospital-based studies in limited number of patients tend to underestimate disease incidence. Secondly, antibiotics can be purchased without prescription in Nepal and undoubtedly, antibiotic use reduced the ability to isolate pathogens from specimens. Thirdly, since this is a retrospective study, some of the important information about illness are lacking from patient's past records.

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