

An Audit of Indoor Morbidity and Mortality in a Medical Ward at a Tertiary Care Hospital

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There is a great geographical variation in disease burden around the world, which is due primarily to environmental, genetic, social and economic factors. Similar variations exist in worldwide mortality figures from a particular disease that can be attributed almost entirely to the access and efficacy of healthcare facilities. We did this audit to identify the major causes of morbidity and mortality in patients admitted in a medical unit of a tertiary care hospital and to highlight the importance of primary prevention. The audit was carried out in West Medical Ward Mayo Hospital Lahore, Pakistan from 1st January 2004 to 31st December 2004. All patients admitted with medical problems from the Outpatient and Emergency Departments were included. During the year 2004, a total of 2045 patients were admitted, out of which maximum number of patients admitted in the ward were suffering from chronic liver disease (17%) followed by ischemic heart disease (14.4%) cerebrovascular accidents (10.4%) and renal diseases. Total number of deaths were 321 with male mortality was 167 (14.40%) and female mortality 154 (17.40%). Chronic liver disease also had the highest mortality (16.8%) followed by cerebrovascular accidents (14%), renal disease (11.5%) and ischemic heart disease (7.8%). Even the mortality due to chronic liver disease was significantly higher ($p < 0.01$) than ischemic heart disease. The number of patients having the four common diseases having age 45 years or more (770) was significantly greater ($p < 0.0001$) than the number of patients (279) in the age range of 15 to 44 years. It was observed that significantly greater number of male patients (595) had morbidity than females (462), ($p < 0.0001$), while mortality has no difference. Chronic liver disease, ischemic heart disease and cerebrovascular accidents are the diseases putting maximum burden on our health resources and disabling our productive population. This audit highlights the fact that all these three groups of diseases can be prevented and thus obviates the need of primary prevention of these major killers.

Key words: Morbidity, Mortality, Statistics, Chronic liver disease, Medical Ward.

There is a great geographical variation in disease burden around the world, which is due primarily to environmental, genetic, social and economic factors. Similar variations exist in worldwide mortality figures from a particular disease that can be attributed almost entirely to the access and efficacy of healthcare facilities. Primary prevention being the focus of healthcare these days, is also reflected in the present day disease facts and figures.

The purpose of our audit was to identify the diseases, which are playing havoc with our population. Our audit will identify not only the major diseases, due to which our general population is being hospitalized but also those, which are the leading killers. With the help of these statistics our health authorities can identify the major culprit diseases of our society, and then plan and manage their resources effectively to cope with the burden of these diseases¹. The most important aspect of our audit is to highlight the aspect of primary prevention.

Method and material:

The audit was carried out in West Medical Ward, Mayo Hospital Lahore, Pakistan for a period of one year from January to December 2004. Data was collected from the inpatient record book and constituted of the age, sex and diagnosis of the patient. Each and every admitted patient was included in the audit. After compiling the data the major disease groups were identified and patients who suffered from a disease other than these were placed in the

"others" group. Morbidity and mortality percentages were then calculated for each disease. Scrutiny of the data was done on monthly basis while the monthly statistics were presented in the monthly ward meeting.

Results:

This retrospective audit was carried out on the record of the patients admitted to the West Medical Ward, Mayo Hospital, Lahore both through Outpatients and Emergency Departments during the year 2004. Total patients admitted were 2045. Amongst them male and female patients were 1160 (56.7%) and 885 (43.27%) respectively.

During the year 2004, maximum number of patients admitted in the ward were suffering from chronic liver disease (17%) followed by ischemic heart disease (14.4%) cerebrovascular accidents (10.4%) and renal diseases (table 1). Other less common disease were poisonings, chronic obstructive pulmonary disease, septicemia, heart diseases other than ischemic heart disease, diabetes mellitus, pulmonary tuberculosis, meningitis, pneumonia and the other group. Total number of deaths were 321 with male mortality was 167 (14.40%) and female mortality 154 (17.40%). Chronic liver disease also had the highest mortality (16.8%) followed by cerebrovascular accidents (14%), renal disease (11.5%) and ischemic heart disease (7.8%), (table 2). Even the mortality due to chronic liver disease was significantly higher ($p < 0.01$) than ischemic

heart disease. Other less common causes of mortality were septicemia, poisoning, chronic obstructive pulmonary disease, meningitis, pulmonary tuberculosis, viral hepatitis, tetanus, diabetes mellitus and other group.

To study the age-wise distribution of disease pattern, we divided the patients into 03 groups depending upon different age bands: 1-14 years, 15-44 years and 45 years or more. The number of patients having the four common diseases in the last group i.e. 45 years or more (770) was significantly greater ($p < 0.0001$) than the number of patients (279) in the age range of 15 to 44 years (table 3). When sex-wise morbidity and mortality of these four common diseases were analyzed, it was observed that significantly greater number of male patients (595) had morbidity than females (462), ($p < 0.0001$), while mortality has no difference (tables 4-5).

Table 1: Morbidity statistics of year 2004.

Disease	Total Admissions	Morbidity (%age of total admissions)
Chronic Liver Disease	348	17.0
Ischemic Heart Disease	294	14.4
Cerebrovascular Accidents	213	10.4
Renal Diseases	202	09.9
Poisoning	139	06.8
Chronic Obstructive Pulmonary Disease	094	04.6
Heart Diseases Other Than Ischemic Heart Disease	088	04.3
Septicemia	070	03.4
Diabetes Mellitus	068	03.3
Pulmonary Tuberculosis	058	02.8
Meningitis	053	02.6
Pneumonia	044	02.1
Others	374	18.3

Table 2: Mortality statistics of year 2004

Disease	Total Deaths	Mortality (%age of total deaths)
Chronic Liver Disease	54	16.8
Cerebrovascular Accidents	45	14.0
Renal Diseases	37	11.5
Ischemic Heart Disease	25	07.8
Septicemia	22	06.9
Poisoning	13	04.0
Chronic Obstructive Pulmonary Disease	13	04.0
Meningitis	11	03.0
Heart Diseases Other Than Ischemic Heart Disease	10	03.0
Pulmonary Tuberculosis	10	03.0
Viral Hepatitis	10	03.0
Tetanus	09	02.8
Diabetes Mellitus	08	02.4
Others	54	16.8

Table 3: Age-wise disease distribution

Disease	1-14 years	15-44 years	45 years or more
Chronic Liver Disease	04	110	234
Ischemic Heart Disease	00	61	233
Cerebrovascular Accidents	00	26	187
Renal Diseases	04	82	116
Septicemia	00	15	55
Poisoning	04	110	25
Chronic Obstructive Pulmonary Disease	00	10	84
Meningitis	08	31	14
Heart Diseases Other Than Ischemic Heart Disease	03	32	53
Septicemia	03	30	25
Viral Hepatitis	01	22	07
Tetanus	02	14	08
Diabetes Mellitus	01	30	37
Pneumonia	01	10	33

Table 4: Sex wise morbidity

Disease	n= Male Pts.	n= female Pts.
Chronic Liver Disease	202	146
Ischemic Heart Disease	175	119
Cerebrovascular Accidents	098	115
Renal Diseases	120	82
Septicemia	17	53
Poisoning	98	115
Chronic Obstructive Pulmonary Disease	78	16
Meningitis	25	28
Heart Diseases Other Than Ischemic Heart Disease	47	41
Septicemia	40	18
Viral Hepatitis	18	12
Tetanus	21	03
Diabetes Mellitus	40	28
Pneumonia	23	21

Table 5: Sex wise mortality

Disease	n= Male Pts.	n= female Pts.
Chronic Liver Disease	26	28
Cerebrovascular Accidents	19	26
Renal Diseases	20	17
Ischemic Heart Disease	17	08
Septicemia	05	17
Poisoning	12	01
Chronic Obstructive Pulmonary Disease	11	02
Meningitis	04	07
Heart Diseases Other Than Ischemic Heart Disease	03	07
Pulmonary Tuberculosis	05	05
Viral Hepatitis	04	06
Tetanus	08	01
Diabetes Mellitus	07	01
Pneumonia	00	00

Discussion:

From these results it is evident that chronic liver disease had the highest morbidity and mortality percentage in our ward during 2004. Ischemic heart disease, renal diseases and cerebrovascular accidents follow chronic liver disease in both the morbidity and mortality lists. A similar data from Rawalpindi in 1999 had also shown chronic liver disease as the major cause of death accounting for 18.9% deaths followed by cardiac disease (14.2%), chronic obstructive pulmonary disease (11.1%) and cerebrovascular accidents (11.1%), whereas two studies done in Karachi in 1990's declared cardiovascular disorders having the highest mortality^{2,3,4}. Chronic liver disease was followed by cerebrovascular accidents, malignancies and myocardial infarction respectively in the mortality statistics of a study conducted in Islamabad in 2001-02⁵. World Health Organization's report 2004 had revealed worldwide mortality figures for 2002 as ischemic heart disease (12.6%), cerebrovascular accidents (9.7%), chronic liver disease (1.4%), chronic obstructive pulmonary disease (4.8%) and renal diseases (1.2%)⁶. Mortality figures of United States published by the Center for Disease Control in 2001 showed that the highest mortality was due to heart diseases followed by malignancies and cerebrovascular accidents. Chronic liver disease was 12th in that list⁷.

Our audit gives a baseline data about the most prevalent medical problems of our society; therefore it can help modify our health resources to the diagnosis, treatment and above all primary prevention of the major diseases identified. Diseases which currently have highest morbidity and mortality in our society can be prevented by highlighting the aspects of their primary prevention. Making the masses aware of, the modes of transmission of hepatitis B and C, risk factors of ischemic heart disease and cerebrovascular accidents and their effective control can reduce the burden of these diseases markedly^{8,9,10,11,12,13}.

Conclusion:

Diseases which currently have highest morbidity and mortality in our society can be prevented by mass media campaign by making the masses aware of, the modes of

transmission of hepatitis B and C, risk factors for ischemic heart disease and cerebrovascular accidents and their effective control.

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