Study of Patterns of Mortality in a Tertiary Care Hospital, Raichur Karnataka

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ABSTRACT

Background: India is encountering a growing burden of non-communicable diseases (NCD) along with infectious diseases, perinatal, and nutritional problems that have long been considered major problems of public health importance. This retrospective analysis was carried out to examine the mortality patterns from communicable diseases and non-communicable diseases (NCD) in government hospital of Raichur. Objective: The objective of the study was to determine the mortality patterns of patients admitted in a tertiary care hospital. Methodology: Total deaths were captured over 1 year (December 2012–November 2013) in government hospital, Raichur. Information obtained from medical records department which included: Dates of admission and death, age, sex, address, and principal cause of death. Only the diseases responsible for deaths are taken as the cause of death. Cause of death was coded using International Classification of Diseases-10 and data were double entered. Results: Overall, 59% of the deaths were attributed to Group I diseases, and 31% to Group II diseases, and 10% to Group III diseases. In all groups, males died more than females, but significantly larger proportions of females died from Group I (45%) diseases compared with other groups. Deaths due to Group I diseases decreased while those due to Group II diseases increased with age. Double burden in mortality was highly observed in the age groups of 15–64 years. Those aged >45 years were dying more likely with NCDs compared with children. Conclusion: The results of the present study shows that, in addition to the common Group I causes of death, emerging Group II diseases are contributing to high proportions of mortality in tertiary care hospital. The planning of health resources and activities should take into account the double burden in mortality due to Group I and Group II diseases. This calls for strengthening approaches toward the control and prevention of NCDs such as cardiovascular and malignant neoplasm.

Key words: Mortality pattern, Tertiary care hospital, Raichur

BACKGROUND

If you look carefully, then you will see that there is no significant change in disease throughout the human history, but the patterns have changed. Every decade there is production of different patterns of disease. So for epidemiologist, event is important and in that measure of death is most important indicator of measure of health. India is encountering a growing burden of non-communicable diseases (NCD) along with infectious diseases, perinatal, and nutritional problems that have long been considered major problems of public health importance. About 90% of global trauma mortality occurs in low-and-middle-income countries. The unknown and unexplored reasons for these mortality to be high and also the unchanging trends still remain. So attention has to be focused on factors that contribute to the higher mortality rate. The Medical Records Department in a teaching hospital has a system of compilation and retention of records; yet, the acquisition of meaningful statistics from these records for health care planning and review is lacking. Mortality data from hospitalized patients reflect the causes of major illnesses and care-seeking behavior of the community as well as the standard of care being provided. This information also provides the basis for patient care and helps the planning of health resources and activities.
administration in managing day-to-day hospital affairs. In
general, the information on disease prevalence, mortality
rates, and patterns in developing countries and which is
heavily populated country like India is scarce and also
because of multicultural and multi-ethnicity and also there
is paucity on information in direct causes of mortality in a
developing country like India. This is definitely contrary to
the developed countries where such data are easily available.
Hence, this study was carried out to examine the mortality
patterns from communicable diseases and NCD in government
teaching hospital of Raichur so that proportionate budget
allocation and redistribution of logistics can be done by the
government in that area in an already constrained budget
allocation and hence mortality can be reduced effectively.

Objective
The objective of the study was to determine the mortality
patterns of patients admitted in a tertiary care hospital.

METHODOLOGY

Information obtained from medical records department
of Raichur Institute of Medical Sciences, Raichur, which
includes: Dates of admission, age, sex, address, and principal
cause of death were taken over 1 year (December 2012–
November 2013) period in government teaching hospital,
Raichur. All cases with complete information on above-
mentioned parameters in 1 year were taken from medical
records department. Cause of death were coded using
International Classification of Diseases (ICD-10) and data
were entered.

Exclusion criterion: Patients summary with
incomplete data were excluded because of non-classification
according to the ICD-10.

ICD – 10

Group I - HIV/AIDS
- Tuberculosis (TB)
- Respiratory infections
- Diarrheal disease
- Meningitis
- Maternal conditions
- Conditions arising during perinatal period
  - Low birth weight
  - Still birth
- Nutritional deficiency.

Group II - Malignant neoplasm
- Diabetes mellitus
- Neuropsychiatric conditions
- Cardiovascular diseases
- Hypertensive heart disease
- Cerebrovascular disease
- Congestive heart failure
- Ischemic heart disease
- Respiratory diseases
- Digestive diseases
- Chronic liver disease
- Genitourinary disease.

Group III – Unintentional-
- Road traffic accidents (RTA)
- Others
- Intentional (Suicide...).

These data were compiled and analyzed using Microsoft
Excel software. The results were tabulated and analyzed
using appropriate statistical tests.

RESULTS

Distribution of mortality in Group-I is 59%, Group-II is 31%,
and in Group-III is 10% according the ICD.

Distribution of mortality in Group-I is 34% in conditions
related to perinatal period, 19% in HIV/AIDS, 18% in TB,
and 5% in maternal conditions. Distribution of mortality
in Group-II is 38% in cardiovascular diseases, 22% in
respiratory diseases, and 12% in chronic liver diseases.

Distribution of mortality in Group-III is 41% in unintentional
deaths, 34% in RTA, and 25% in intentional deaths.

Distribution of mortality according to age group in various
group includes, 94% in 0–14 years age in Group-I, 44% in
Group-I, and 32% in Group-II in the age group of 15–34
years, 30% in Group-I in the age group of 35–44 years, 68%
in Group-II in the age group of 45–54 years, 78% in Group-II
in the age group of 55–64 years, and 83% in Group-II in age
>65 years. Distribution according to gender in various groups
include 55% in males in Group-I, 65% males in Group-II,
and 34% in females in Group-III.

Distribution of mortality according to the department wise
includes, medicine department has seen highest mortality in
the month of December and August, surgery department has
seen highest mortality in March and November, pediatrics
department has seen highest mortality in May and November,
and obstetrics and gynecology department has seen highest
mortality in March and May, and overall deaths are seen in
May.

DISCUSSION

In our study, distribution of mortality according to the
department wise includes [Table 1], medicine department has
seen highest mortality in the month of December and August, surgery department has seen highest mortality in March and November, pediatrics department has seen highest mortality in May and November, and obstetrics and
gynecology department has seen highest mortality in March and May, and overall deaths are seen in May. Maximum deaths were seen in the month of August in all 5 years, and minimum deaths were seen in February. The seasonal index of mortality was maximum in the rainy season, that is, in the months of July-August-September-October, followed by the summer season, that is, in the months of March-April-May. It was minimum in the winter season, that is, November-December-January-February in all 5 years.

In our study, distribution of mortality in Group-I [Graph 1] is 34% in conditions related to perinatal period [Graph 2], 19% in HIV/AIDS, 18% in TB, and 5% in maternal conditions. Distribution of mortality in Group-II [Graph 3] is 38% in cardiovascular diseases, 22% in respiratory diseases, and 12% in chronic liver diseases. Distribution of mortality in Group-III [Graph 4] is 41% in unintentional deaths, 34% in RTA, and 25% in intentional deaths. Among the communicable diseases, the most common cause of death was TB (39.7–47.8%), followed by infection specific to the perinatal period (9.44–14.4%).

The most commonly encountered cause of mortality was cerebrovascular accident constituting 19 (28.8%) cases. The second majority of mortality cases were...
hypertensive disorders constituting 13 (19.7%) cases, and the third majority were septicemia and pneumonia accounting for 12 (18.2%) and 12 (18.2%) cases, respectively. About 27.8% patients deaths involved circulatory system. Seventy-one deaths occurred due to cerebrovascular accidents which are more in males (44) compared to females (27). More than 30% deaths were due to respiratory or cardiovascular causes. About 25% deaths were due to NCDs. Majority of patients (72%) had an NCD condition as the primary reason for admission. Specific leading causes of morbidity were HIV/AIDS in 30% patients, hypertension in 14%, TB in (12%), non-TB pneumonia in (11%), and heart failure in 9.3%.

Distribution of mortality according to the age group in various group includes, 94% in 0–14 years age in Group-I [Graph 5], 44% in Group-I, and 32% in Group-II in the age group of 15–34 years, 30% in Group-I in the age group of 35–44 years, 68% in Group-II in the age group of 45–54 years, 78% in Group-II in the age group of 55–64 years, and 83% in Group-II in age group of >65 years. Distribution according to gender in various group includes, 55% in males in Group-I, 65% males in Group-II, and 34% in females in Group-III. Maximum deaths were in the age group of 41–60 years (35%), 60% of deaths occurred among patients above age of 40 years. About 25–30% deaths were among geriatric population. More than 60% deaths were among males

CONCLUSION AND RECOMMENDATION

- The results of the present study show that, in addition to the common Group I causes of death, emerging Group II diseases are contributing to high proportions of mortality.
- Thus, priority should be given to the prevention and management of conditions arising during perinatal period such as low-birth weight and still birth, HIV/AIDS; TB, respiratory infections, cardiovascular diseases, malignant neoplasm, chronic respiratory diseases, and RTA.
- The planning of health resources and activities should take into account the double burden in mortality due to Group I and Group II diseases.
- This calls for strengthening approaches toward the control and prevention of NCDs such as cardiovascular and malignant neoplasm

REFERENCES