ORIGINAL ARTICLE

Mortality in the Department of Surgery, Alor Setar Hospital

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Summary

This is a retrospective study of the annual mortality that occurred in the Department of Surgery, Alor Setar Hospital, for the years 1995 to 1997. This study looks at the number of admissions to the surgical wards and categorizes the causes of death. The annual mortality rates were 2.60, 2.89 and 3.25 per hundred admissions for the year 1995, 1996 and 1997 respectively. Head injury was the leading cause of death whilst sepsis and advanced malignancies second and third commonest causes. We hope that with the publication of these figures, we can initiate more studies to analyse similar local data.

Key Words: Mortality, Head injury, Sepsis, Advanced malignancies

Introduction

Mortality is oftenly perceived as a failure in the eyes of the doctors. It is a subject that most of us would be reluctant to discuss, leave alone publishing it. Unfortunately, this attitude does not help us in improving our standards, and service to the patients. Without a norm, it is difficult for us to gauge ourselves on where we stand and if our results are acceptable.

The objective of this study was to analyse the various diagnostic causes of mortality at the Department of General Surgery in Hospital Alor Setar. Such studies are scarce in this part of the world. We hope that by publishing our figures, other researchers may be able to do similar or comparative studies.

Materials and Methods

The total number of annual admissions and mortality were obtained from the record office. The causes of death were retrieved and analyzed from the summary of weekly departmental mortality meetings. Unfortunately 10 to 15% of the records were not retrievable due to poor record keeping. Causes of death are categorized. (Table I) Patients with significant injury in two or more systems are classified as multiple trauma regardless of the actual cause of death. Death classified as Orthopaedic causes are patients who are diagnosed with pelvic and/or femur fracture, with or without other bony fractures, but without other significant injury. The death is attributed to hypovolaemic shock. Patients who died of advanced malignancies are the patients diagnosed with advanced metastatic malignacies where only palliative care is provided. Deaths classified as sepsis are those with perforated viscera, ascending cholangitis, intraperitoneal tuberculosis and pneumonia (excluding post-operative pneumonia). Deaths under the medical causes are myocardial infarction, pulmonary embolism, congestive cardiac failure and COAD. (Table II) However any death due to these causes after elective surgery are classified as Post-elective Surgery Mortality. A number of unclassified deaths are included into the miscellaneous causes. Table III shows the mortality of this group.

Table I
Classification of Causes of Death

Year	1995	1996	1997
Head Injury	65 (41.1)*	56 (32.4)	63 (33.0)
Abdominal Injury	1 (0.6)	2 (1.2)	2 (1.0)
Chest Injury	3 (1.9)	5 (2.9)	6 (3.1)
Polytrauma	13 (8.2)	21 (12.1)	17 (8.9)
Adv Malignancy	10 (6.3)	23 (13.3)	36 (18.8)
Sepsis	23 (14.6)	22 (12.7)	29 (15.2)
GIT Bleeding	8 (5.1)	10 (5.8)	10 (5.3)
Burns	2 (1.3)	3 (1.7)	4 (2.1)
Medical Causes	9 (5.7)	9 (5.2)	10 (5.3)
Post-elec Surg Death	1 (0.6)	5 (2.9)	2 (1.0)
Miscellaneous	23 (14.6)	27 (15.6)	12 (6.3)
Total	158 (100.0)	183	191 (100.0)

**Number (percentage)*

Table II
Medical Causes of Death

Myocardial Infarction
Pulmonary Embolism
Congestive Cardiac Failure
Respiratory Failure

Results

The total numbers of admissions to the Department of Surgery demonstrate a small reduction to 6529 in 1997 from 7232 in 1996. However there was a small increase in mortality over the years, from 2.6 per 100 admissions in 1995 to 3.25 per 100 admissions in 1997. (Table IV) Head injury, was the leading cause of death, making up 41%, 32% and 33% for the years 1995,1996 and 1997 respectively. The proportion of death due to sepsis and advanced malignancies are similar, which are second and third leading causes of death (excluding the miscellaneous group). (Table III)

Table III
Deaths Included in Miscellaneous Group

Pancreatitis
Ruptured AAA
Hypersensitivity
Hepatic Enchelopathy
Orthopaedic Causes
Death of Undertermined Nature

Table IV
Mortality Record Overview

Year	1995	1996	1997
Total Admissions	6912	7232	6527
Official Mortality	180	209	212
Mortality Record Retrieved	158	183	191
Mortality Rates*	2.6	2.89	3.25

**per 100 admissions*

Discussion

It should be stressed that these figures are produced from a general surgical department. There was no subspecialty such as neurosurgery, vascular surgery, paediatric surgery or cardiothoracic surgery in this hospital at the time of the study.

The actual reason for a drop in the total number of admission in 1997 is undetermined. It is obvious that the three leading causes of death are head injury, sepsis and advanced malignancies. It should be pointed out that the majority of mortality classified as polytrauma actually died of head injury. If these figures were added, mortality due to head injury would be much higher. These victims are mostly motorcyclists who did not wear crash helmets, which concurs with the recent study conducted at Kulim Hospital (unpublished). There were a total of eight post-elective surgery deaths in three years. With the exception of two

patients, the mortality in this group are from patients who died within the same hospital admission after liver resections for hepatoma, Whipple's Procedures for carcinoma of head of pancreas or oesophagectomy for carcinoma of the oesophagus. The two exceptions were post-operative myocardial infarction after hemithyroidectomy and congestive cardiac failure after pyelolithotomy. We are uncertain as to the reason for the slight increase of our mortality over the years.

This is a retrospective audit of mortality in a General Surgical Department, which handles all types of surgical conditions. There are shortcomings, which are mainly due to the poor record keeping. With computerization of the hospital records, we hope that a better medical record keeping will provide us with more comprehensive figures for the years to come.

As the figures of mortality from Malaysian hospitals even around the Asian nations are scarce, we hope that with the publication of these figures, we could initiate more studies to emerge from Malaysian hospitals. Furthermore it may be used as a yardstick for various hospital to assess our own standard.

Acknowlegdement

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