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ORIGINAL ARTICLE

Patterns of admitted cases to Respiratory Intensive Care Unit at Zagazig University Hospitals, Egypt

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KEYWORDS

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Abstract *Background:* It is well accepted that early appropriate referral of patients to an ICU can significantly reduce early and possibly late mortality in the critically ill. At the same time improper selection of patients for ICU, often limits bed availability in ICUs. This in turn, adversely affects the dynamics of the whole hospital.

Objective: To determine the admission pattern and outcome of patients in the Respiratory Intensive Care Unit (RICU) of Zagazig University Hospitals, Egypt.

Design: The study was carried out as a prospective analytical study.

Patients and methods: All cases admitted to RICU during the period from March 2010 to October 2010. They were 200 cases {126 males (63%) and 74 females (37%)} with an age range from 11 to 86 years. They were classified according to the causes of admission to RICU into 162 cases due to primary respiratory causes (81%) and 38 cases due to secondary respiratory causes (19%). On admission the following were carried out for all patients: full medical history, chest examination, assessment of Glasgow Coma Scale (GCS) and Acute Physiology and Chronic Health Evaluation II (APACHE II) score, arterial blood gases analysis, plain chest and heart X-ray, computerized tomography (CT) electrocardiography (ECG) or echocardiography (ECHO) study when needed and assessment of the outcome.

Results: Two hundred cases were admitted during the study period: 57% were referred by chest physicians, 14.5% from other hospitals, 13.5% from other departments and others from chest ward

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and emergency room (ER). The mean GCS and APACHE II score were 12.7 ± 3.97 and 14.4 ± 6.5 respectively. The length of stay in RICU was 7.2 ± 7.4 days. Analysis of outcome of the cases showed that 70 patients (35%) were transferred to chest ward, 61 patients (30.5%) died and 54 patients (27.0%) were discharged to home. There was a significant difference between cases with primary (1st) and secondary (2nd) respiratory causes regarding outcome ($P < 0.005$) with mortality rate (26.6%) among cases with 1st respiratory causes while in cases with 2nd respiratory causes were 60.4%. Outcome as regards source of admission showed that the highest percentage of death occurred among cases referred from chest ward and non chest physicians (63.7% and 62.5%) respectively. There was a significant association between outcome and duration of stay ($P < 0.001$). Concerning the outcome on using mechanical ventilation, the mortality rate in mechanically ventilated patients was 52.05% while in non mechanically ventilated patients it was 47.5%.

Conclusion: This study showed that the best prognosis of admitted patients to RICU was for those who were transferred earlier especially those transferred by chest physicians and patients with 1st respiratory diseases than those with 2nd respiratory diseases. Also, cases with high Glasgow Coma Scale and low APACHE II score and those with a short duration of stay in RICU, especially without the need for mechanical ventilation had a good prognosis. Therefore, considering those aspects in the clinical practice would be reflected as a better outcome on dealing with RICU patients.

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Introduction

An Intensive Care Unit (ICU), is a specialized section of a hospital that provides comprehensive and continuous care for persons who are critically ill and who can benefit from treatment [1]. Patients are generally admitted to an ICU if they are likely to benefit from the level of provided care. Intensive care has been shown to be beneficial for patients who are severely ill and medically unstable that is, they have a potentially life threatening disease or disorder [2].

Respiratory Intensive Care Unit (RICU) patients are a heterogeneous group with severe illness, multiple system dysfunction and multiple coexisting medical problems [3].

About one third of hospital mortality occurs in critically ill patients inside Intensive Care Unit (ICU) [4]. A Clinician has to consider many inter-related factors in making a prognosis regarding outcome in critically ill patients, including age, severity and irreversibility of the acute illness, physiological reserve and response to therapy [5].

Critically ill patients are responsible for 10–20% of global hospital costs and the ability to identify critically ill patients who will not survive until hospital discharge may allow identification of high risk patients [6].

It is well accepted that early appropriate referral of patients to an ICU can significantly reduce early and possibly late mortality in the critically ill. At the same time improper selection of patients for ICU who block ICU beds often limits bed availability in ICUs. This in turn, adversely affects the dynamics of the whole hospital [7].

This study was carried out to determine the different patterns of admitted cases to Respiratory Intensive Care Unit, Zagazig University Hospitals stressing on patient's characteristics, their referral sources, reasons for admissions together with their ICU manipulations and outcomes.

Patients and methods

Patients

This study was carried out at the Respiratory Intensive Care Unit (RICU), Zagazig University Hospitals and included all cases admitted during the period from March 2010 to October 2010. They were 200 cases {126 males (63%) and 74 females (37%)} with an age range from 11 to 86 years. They were classified according to the causes of admission to ICU into 162 cases due to primary (1st) respiratory causes (81%) and 38 cases due to secondary (2nd) respiratory causes (19%).

Methods

All data were collected from patient (if possible) or his relatives and the cases were followed up till discharge from RICU.

All cases were subjected to the following:

- 1- Thorough medical history stressing on: History of smoking, treating physicians before ICU admission, Primary diagnosis, Source of ICU admission.
- 2- Full clinical examination in ICU: general and local chest examination.
- 3- Assessment of Glasgow Coma Scale (GCS): [8].
- 4- Assessment of APACHE II score within 24 h of admission [9].
- 5- Plain chest X-ray (posteroanterior, or anteroposterior according to circumstances).
- 6- Electrocardiography (ECG) or echocardiography (ECHO) and computerized tomography (CT) study if needed
- 7- Laboratory investigations;
 - Arterial blood gas (ABG) analysis.
 - Liver and kidney function tests.

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