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Original Article

Assessment of Prevalence of Respiratory Diseases in Patients Admitted to Respiratory Intensive Care Unit

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ABSTRACT:

Background: Intensive care unit (ICU) is usually only offered to patients whose condition is potentially reversible and who have a good chance of surviving with intensive care support.` Respiratory ICUs (RICUs) have developed around the world as specialized single organ units providing an intermediate level of care between that supplied in ICUs and in general wards.Hence; this study was carried out to determine the different patterns and outcome of admitted cases to Respiratory Intensive Care Unit. **Materials & methods**:The present study included assessment of pattern of prevalence of respiratory diseases in patients admitted to RICU. A total of 50 patients were included in the present study who was admitted to RICU. Complete demographic and clinical data of all the patients was collected. **Results:** COPD was the most prevalent respiratory disease in the present study. Nosocomial infection was found to be present in 10 patients out of 50, among which Staphylococcus aureus infection was the most common infection, present in 3 patients. **Conclusion:** COPD patients should be preferred for admission in the respiratory care unit in comparison to the patients with other respiratory pathologies.

Key words: Intensive care unit, Respiratory.

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INTRODUCTION

In recent decades, intensive care medicine has developed into a highly specialised discipline covering several fields of medicine. Intensive care unit (ICU) is usually only offered to patients whose condition is potentially reversible and who have a good chance of surviving with intensive care support.[1- 3]Since these patients are critically ill, the outcome of intervention is sometimes difficult to predict. Respiratory ICUs (RICUs) have developed around the world as specialized single organ units providing an intermediate level of care between that supplied in ICUs and in general wards.[4, 5] This model of care has been generally considered as an example of good management of hospital resources, enabling effective control of costs, although its actual cost-effectiveness has been questioned.[6, 7] This study was carried out to determine the different patterns and outcome of admitted cases to Respiratory Intensive Care Unit.

MATERIALS & METHODS

The present study was carried out in the department of human physiology and respiratory medicine of the medical institute and included assessment of pattern of prevalence of respiratory diseases in patients admitted to RICU. Ethical approval was taken from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. A total of 50 patients were included in the present study who was admitted to RICU. Exclusion criteria

- Patients who refused consent to participate in the study
- Patients with age less than 14 years
- Patients with re-admission to ICU during same hospitalization
- Patients with less than 24 hours between ICU admission and discharge

All the routine haematological investigations were carried out in all the patients. Complete demographic and clinical data of all the patients was collected. All the results were compiled and analyzed by SPSS software. Chi- square test and student t test were used for assessment of level of significance.

RESULTS

Chronic obstructive pulmonary disease (COPD) was the most prevalent respiratory disease in the present study found in 10 patients, followed by Pneumonia and Pneumothorax. Pulmonary TB and bronchial asthma was present in 6 patients each. Nosocomial infection was found to be present in 10 patients out of 50, among which

Staphylococcus aureus infection was the most common infection, present in 3 patients, followed by Acinetobacter, Influenza and Streptococcus pneumonia.

Table 1: Distribution of patients according to diagnosis

Diagnosis	No. of patients	Percentage
Bronchial Asthma	6	12
COPD	10	20
Pneumonia	8	16
Pneumothorax	7	14
Pulmonary Tb	6	12
Others	13	26
Total	50	100

Table 2: Distribution of patients according to the presence of nosocomial infection

Infection		No. of patients	Percent
Absent		40	80
Present	*Acinetobacter*	2	4
	H. Inluenzae	1	2
	KlebsiellaPneumoniae	1	2
	Pseudomonas aeruginosa	1	2
	Staphylococcus aureus	3	6
	Streptococcus pneumoniae	2	4
Total		50	100

DISCUSSION

Intensive care units (ICUs) of most hospitals in developed countries have become separate departments staffed by career intensive care physicians or intensivists from various fields of medicine. In Nigeria, however, ICUs are still part of the anaesthesia department and critical care constitutes a substantial part of the workload and responsibilities of anaesthetists. The ICUs have developed a highly specialized field with variations in their size and capabilities. This variation occurs between regions, countries or states and even hospitals. The types of ICU include general, medical, surgical, neurosurgical, cardiothoracic, paediatric, neonatal, coronary care, burns and trauma.[5- 8] Hence; we planned this study to determine the different patterns and outcome of admitted cases to Respiratory Intensive Care Unit.

In the present study, COPD was the most common respiratory pathology seen in 20 percent patients of the present study population. Chronic obstructive pulmonary disease (COPD) is an increasingly common cause of death. At severe stages of the disease, episodes of acute respiratory failure often require intensive care unit (ICU) admission. Although the corresponding acute mortality is relatively low and lower than that of other diseases, outcomes after an exacerbation are poor. Disease severity, comorbidities, and impairment of activities of daily living are salient prognostic factors. Of note, intubation and invasive ventilation during an episode of exacerbation are associated with longer durations of stay and increased in-hospital and post-hospital mortality rates.[9, 10]

Dasgupta S et al (2015) determined the incidence of nosocomial infections acquired in the ICU, their risk factors, the causative pathogens and the outcome in a tertiary care teaching hospital. This was a prospective observational study conducted in a 12 bedded combined medical and surgical ICU of a medical college hospital. The study group comprised 242 patients admitted for more than 48 h in the ICU. Data were collected regarding severity of the illness, primary reason for ICU admission, presence of risk factors, presence of infection, infecting agent, length of ICU and hospital stay, and survival status and logistic regression analysis was done. The nosocomial infection rate was 11.98% (95% confidence interval 7.89–16.07%). Pneumonia was the most frequently detected infection (62.07%), followed by urinary tract infections and central venous catheter associated bloodstream infections. Prior antimicrobial therapy, urinary catheterization and length of ICU stay were found to be statistically significant risk factors associated with nosocomial infection. Nosocomial infection resulted in a statistically significant increase in length of ICU and hospital stay, but not in mortality. Nosocomial infections increase morbidity of hospitalized patients.[11] Castro-Avila AC et al (2015) determined the effect of early rehabilitation for functional status in ICU/high-dependency unit (HDU) patients. MEDLINE, EMBASE, CINALH, PEDro, Cochrane Library, AMED, ISI web of science, Scielo, LILACS and several clinical trial registries were searched for randomised and non-randomised clinical trials of rehabilitation compared to usual care in adult patients admitted to an ICU/HDU. Results were screened by two independent reviewers. Primary outcome was functional status. Secondary outcomes were walking ability, muscle strength, quality of life, and healthcare utilisation. Data extraction and methodological quality assessment using the PEDro scale was performed by primary reviewer and checked by two other reviewers. The authors of relevant studies were contacted to obtain missing data. 5733 records were screened. Seven articles were included in the narrative synthesis and six in the meta-analysis. Early rehabilitation had no significant effect on functional status, muscle strength, quality of life, or healthcare utilisation. However, early rehabilitation led to significantly more patients walking without assistance at hospital discharge (risk ratio 1.42; 95% CI 1.17-1.72). There was a non-significant effect favouring intervention for walking distance and incidence of ICU-acquired weakness. Early rehabilitation during ICU stay was not associated with improvements in functional status, muscle strength, quality of life or healthcare utilisation outcomes, although it seems to improve walking ability compared to usual care.[12]

CONCLUSION

From the above results, the authors concluded that COPD patients should be preferred for admission in the respiratory care unit in comparison to the patients with other respiratory pathologies. However; future research is recommended.

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