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ORIGINAL ARTICLE

Evaluation of pattern of various respiratory disorders among patients admitted to respiratory ICU

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ABSTRACT:

Background: To assess the different patterns and outcome of admitted cases to Respiratory Intensive Care Unit. **Materials & method:** 100 patients were included in the present study. Spectrum of respiratory pathologies were evaluated. Outcome was assessed under following headings; Discharge under satisfactory condition, Discharge on request and Death. All the results were analysed by SPSS software. **Results:** COPD was the most common pathology observed seen in 37 percent of the patients followed by Pneumonia and bronchial asthma seen in 15 percent of the patients each. Mortality was seen in 25 percent of the patients while 55 percent of the patients were discharged under satisfactory conditions. **Conclusion:** All hospitals, primary care, private clinics physicians should be directed for referral of the critical cases as early as they can to RICU and, if any, leaving the care of chest cases for chest physicians as this improves the outcome of patients and limits the economics of their management.

Key words: Disorder, Intensive Care Unit, Respiratory

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INTRODUCTION

Infection is a major challenge in the intensive care unit (ICU). Cited prevalence rates of ICU infection vary between 45% to 58%, and incidence rates between 30% to 35%. Infections are already present on admission to the ICU in about 50% of cases; rates are perhaps even higher in studies limited to critically ill patients. It has been shown that infections originating from the urinary tract usually have a better outcome than infections from other sources. However, whether there are differences in outcomes for other sources of sepsis is not well defined. Lung and abdominal infections are the most common infections in the ICU, and several studies have suggested that, although respiratory infections are more common, abdominal infections may be more severe.[1- 3]

Make and associates found that only 5 of 16 ventilator-dependent patients did not benefit from a rehabilitation program started after their admission to an intensive care unit (ICU), while Foster and coworkers, in an uncontrolled study, found improvement in exercise tolerance, pulmonary function, and arterial blood gas values in a subset of COPD patients with severe hypercapnia, some of whom were transferred directly from an ICU. These data suggest that for patients recovering from an episode of acute exacerbation, early institution of a rehabilitation program may be useful in improving the outcome. The development of the respiratory intensive care unit (RICU) enables medical staff to work in a specialized environment in which medical and paramedical teams are familiar with and well trained in the care and management of severely ill respiratory patients, including treatment with invasive and noninvasive mechanical ventilation.[4- 6]Hence; the present study was conducted for evaluating pattern of various respiratory disorders among patients admitted to respiratory ICU.

MATERIALS & METHOD

The present study was planned in the department of pulmonary medicine of medical institution and included assessment of patients admitted to medical and pulmonary ICU because of various respiratory diseases. A total of 100 patients were included in the present study. Patients of respiratory diseases admitted to pulmonary ICU and medical ICU were included in the present study. Outcome was assessed under following headings;

- Discharge under satisfactory condition
- Discharge on request
- Death

All the results were analyzed by SPSS software.

RESULTS

Mean age of the 100 patients were included in the present study was 51.6 years. Out of 100 patients, 68 percent were males. COPD was the most common pathology observed seen in 37 percent of the patients followed by Pneumonia and bronchial asthma seen in 15 percent of the patients each. Mortality was seen in 25 percent of the patients while 55 percent of the patients were discharged under satisfactory conditions.

Table 1: Distribution of patients according to gender

Gender	No. of patients	Percentage
Male	68	68
Female	32	32
Total	100	100

Table 2: Distribution of patients according to diagnosis

Diagnosis	No. of patients	Percentage
Bronchial Asthma	15	15
Pneumonia	15	15
Pneumothorax	12	12
Pulmonary Tb	8	8
Bronchiectasis	9	9
Chronic Empyema	4	4
COPD	37	37
Total	100	100

Table 3: Distribution of patients according to the treatment outcome

Treatment Outcome	No. of patients	Percent
Death	25	25
Discharge in satisfactory condition	55	55
Discharge on request	20	20
Total	100	100

DISCUSSION

Respiratory diseases in the developing world are a major burden in terms of morbidity and mortality and, particularly as related to chronic respiratory disease, are of increasing concern. For many years, the leading cause of adult respiratory disease mortality has been tuberculosis, which still kills far more people than it should, given the increased efficacy of treatment and preventive regimens.[7- 9]Hence; the present study was conducted for evaluating pattern of various respiratory disorders among patients admitted to respiratory ICU.

Mean age of the 100 patients were included in the present study was 51.6 years. Out of 100 patients, 68 percent were males. COPD was the most common pathology observed seen in 38 percent of the patients followed by Pneumonia and bronchial asthma seen in 15 percent of the patients each. Estenssoro E et al determined the incidence of prolonged mechanical ventilation (PMV), which is associated with increased health-care costs and risks of adverse events, and to identify its early predictors. Seventy-nine patients (14%) required PMV. The non-PMV group consisted of 110 patients. Simplified acute physiology score (SAPS) II, APACHE (acute physiology and chronic health evaluation) II, therapeutic intervention scoring system, Pao(2)/Fio(2), shock, ICU LOS, and hospital LOS differed significantly between groups. However, logistic regression identified shock on ICU admission day as the only independent predictor of PMV (odds ratio, 3.10; p = 0.001). SAPS II and Pao(2)/Fio(2) had the nearest coefficients and were used to build the predictive model. Sensitivity analysis was performed including the 130 patients who died early, and shock remained the most powerful predictor. PMV was a frequent event in this cohort. The presence of shock on ICU admission day was the only prognostic factor, even adjusting for severity of illness and hypoxemia.[10]Lone NI et al conducted a study was to establish the incidence and outcomes of prolonged mechanical ventilation (PMV) in a UK administrative health care region without a dedicated weaning unit, and model the potential impact of establishing a dedicated weaning unit. The incidence of PMV was 4.4 per 100 ICU admissions, and 6.3 per 100 ventilated ICU admissions. PMV patients used 29.1% of all general ICU bed days, spent longer in hospital after ICU discharge than non-PMV patients (median 17 vs 7 days, P < 0.001) and had higher hospital mortality (40.3% vs 33.8%, P = 0.02). For the region, in which about 70 PMV patients were treated each year, a weaning unit with a capacity of three beds appeared most cost efficient, resulting in an occupancy rate of 73%, admission refusal rate at 21 days of 36%, and potential cost saving of £344,000 (€418,000) using UK healthcare tariffs. One in every sixteen ventilated patients requires PMV in our region and this group use a substantial amount of health care resource.[11]

Mortality was seen in 25 percent of the patients while 55 percent of the patients were discharged under satisfactory conditions. Pan SW et al identified the predictors for prolonged mechanical ventilation (PMV) of more than 21 days among intensive care unit (ICU) patients. The outcome measurement was the occurrence of PMV. In a multivariate regression analysis, the independent risk factors for PMV were AKI on MV initiation day, longer MV duration before DRW, and higher rapid shallow breathing index on DRW. Acute kidney injury on MV initiation day is an independent risk factor for PMV of more than 21

days, which may be helpful for clinicians to refine their management of these ICU patients early.[12]

CONCLUSION

All hospitals, primary care, private clinics physicians should be directed for referral of the critical cases as early as they can to RICU and, if any, leaving the care of chest cases for chest physicians as this improves the outcome of patients and limits the economics of their management.

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