



ORIGINAL RESEARCH PAPER

Physiotherapy

EFFECT OF THE ACTIVE CYCLE BREATHING TECHNIQUE(ACBT) OVER THE POSTURAL TECHNIQUE IN CASE OF ACUTE RESPIRATORY DISTRESS SYNDROME(ARDS)

KEY WORDS: Acute respiratory distress syndrome (ARDS), Active cycle breathing technique (ACBT), PD (Postural Drainage), RF (Respiratory Failure), ICU (Intensive Care Unit)

Dr. Alka Agarwal

ABSTRACT

Background: acute respiratory distress syndrome is very common type of disease in India, about 1 million care usually find every year, patient comes with common problem of SOB and giddiness, fever, cough with sputum. There are various Physiotherapy approaches towards managing this problem .Active cycle breathing technique is helpful in reducing symptoms of ARDS .On the other hand ,many empirical data purports that postural drainage technique with manipulation like percussion and vibration is a good choice of treatment in reducing the symptoms of ARDS. The purpose of this study is to know the comparative effect of ACBT versus PD technique in patients with ARDS. **Material and Method :** The study was randomized controlled with a sample of 30 subjects were involved for this study with consideration of inclusion and exclusion criteria ,both male and female, all subjects were assigned according to criteria(inclusion and exclusion) and carried out at IPD of CCS Hospital, Meerut. The subjects were equally divided into two groups, group A (15 subjects, 11 male and 4 female), and group B (15 subjects 8 male and 7 female). The results were recorded to compare the pre and post test result. **Result:** The result of this study is accordance with Andreas Pflieger 1992, who suggested that airways clearance techniques are used to aid in mucus clearance in a variety of disease such as COPD and technique like expiratory pressure technique can be used to clear the airways.

INTRODUCTION

Acute respiratory distress syndrome is a severe and acute form of respiratory failure. Acute respiratory distress syndrome is triggered by pulmonary aspiration severe burns with or without inhalation injury. It is also correlated with cardiopulmonary bypass surgery, severe trauma, massive blood transfusion, pre-eclampsia, and septicemia.

The pathological changes occur in acute respiratory distress syndrome where activate neutrophils are thought to release a number of vasoactive mediators that damage the alveolar membrane. As a result of increase endothelial permeability with the alveolar capillary membrane, fluid moves from the pulmonary capillaries into the gas exchange area of the lung. This result in alveolar edema and extravasation of inflammatory cell. The pulmonary edema is there for said to be non cardiogenic because there is normal hydrostatic pressure in the pulmonary vasculature, as this acute phase progress there is increase congestion in the capillaries. The loss of functioning alveoli results in severe hypoxemia and respiratory failure.

Sign and symptoms: of acute respiratory distress syndrome is shortness of breath, cough with sputum, fever, malaise, complain of abdominal pain, the appearance of diffuse bilateral pulmonary infiltrates on chest XRay, a falling pulmonary compliance, edema, acute tachycardia, tachypnea, widespread wheezing and crackle on auscultation, the presence of pulmonary edema with normal hydrostatic pressure in the pulmonary vasculature.

The disease usually progress to state of severe respiratory failure which required the support of mechanical ventilation. The lung become progressively stiffer and adequate oxygenation and ventilation become more difficult, haemoptysis, nasal flaring, Vocal fremitus and use of accessory muscles of respiration.

EXPERIMENTAL HYPOTHESIS - there is significant difference in treating patient with manual and PD Technique to clear the airways and increase the chest expansion in ARDS.

NULL HYPOTHESIS- There is no significant difference in treating patient with manual and PD Technique to clear the airway and increase chest expansion in ARDS.

MATERIALS AND METHODS

Number of subjects- The total numbers of participants were 30(both males and females)

Type of sampling – Random

Sample selection- The subject diagnosed as having chest pain with shortness of breath and upper respiratory tract infection showed signs and symptoms and were requested to participate in study. Purpose of study was explained to the subject. An informed consent was taken from the subject. All the patients were assessed using a similar assessment Performa and assigned randomly to either of the group.

Duration of study- 6 months

Group division- Subjects were randomly divided into two groups, group A and group B Group A = active cycle breathing technique + spirometry Group B = Postural Drainage (percussion, vibration and shaking) + deep breathing exercise.

Place of study- Chaterpati Shivaji Hospital of swami Vivekanand Subharti University, IPD (General medicine word, ICU and Respiratory ward) CSSH, Meerut.

STUDY DESIGN

It was an experimental design where subjects are randomly allocated in 2 groups, group A and group B.

Group A was having active cycle breathing technique and group B was having manual chest physiotherapy and deep breathing exercises for 20 minutes, common in both the groups for the effect of intervention of the dependent variables.

An appropriate reading of VAS, pulse oximeter reading and HRCT score was taken on first day (1 day) and last day(10th day).

Ethical approval was obtained from the board studies of chaterpati Shivaji hospital, SVSU, Meerut- (U.P.India).

SELECTION CRITERIA

INCLUSION CRITERIA

1. Age 30-50years
2. Males and females both
3. All patients with ARDS primary symptoms
4. Patient without any complications of heart
5. Patient should be stable and supportive
6. Patient not with ventilator support

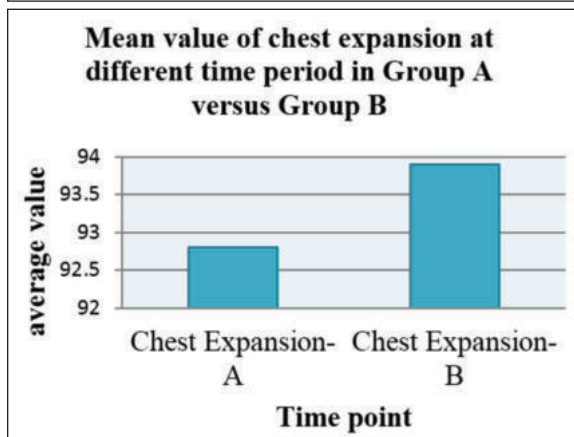
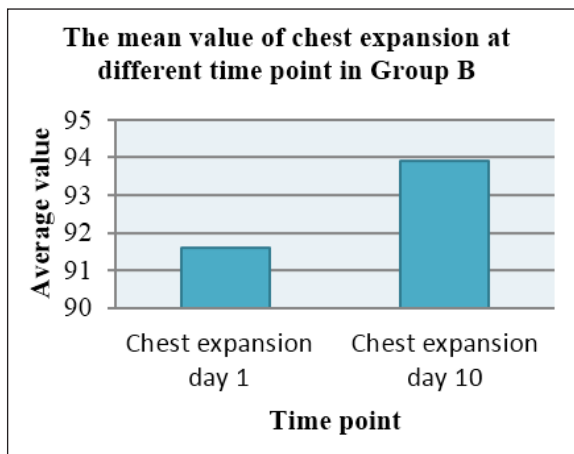
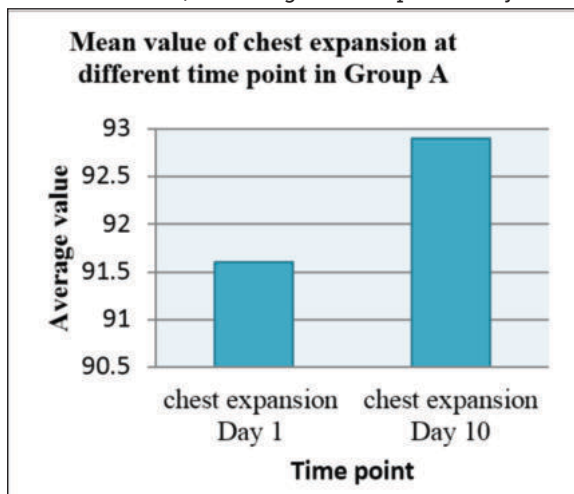
EXCLUSION CRITERIA

1. Age not above 50years or less than 30years
2. Recent fracture less than 1 year around spine and thorax
3. Recent thoracic surgery
4. Any kind of chest deformities

5. Tumors
6. Any systematic disease, pulmonary infection
7. Congenital and acquired deformity i.e. Torticollis, scoliosis, kyphoscoliosis
8. Patient with neurological disorders

DATA ANALYSIS

Data analysis based on subjects comparison value of saturation of oxygen, chest expansion and sputum related scale, pre and post values expansion of subjects of group A with active cycle breathing technique + spirometry and group B with manual chest physiotherapy percussion and vibration+ postural drainage. The comparison has been made on 1st and 10th day of session in which mean value of chest expansion and saturation of oxygen values varied Chest expansions from 91.77 to 93.89 mean P value 7.53 to 7.65 Saturation of oxygen from 70-80 to 90-98 With significant P value more than .10, shows a significant impact on subjects.



CONCLUSIONS

The study was done on 30 subjects with any previous history of lung disease, pulmonary hypertension, any systematic disease or thoracic surgery. Subjects will the age group 30-50 years divided into two groups A and B, both groups are with symptoms of acute respiratory distress syndrome, the both types of technique clear the lung field improve chest expansion and reduces the complications of shortness of breath and help in complain of chest pain.

The result shows the significant effect on primary symptoms of acute respiratory distress syndrome and improves their health and fitness, and promotes the activities of daily living.

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