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ASSESSING THE EFFECTIVENESS OF TWIN TECHNIQUE WITH NEBULIZATION ON RESPIRATORY STATUS AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND BRONCHIECTASIS

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AUTHOR'S CONTRIBUTION

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The breath is an essential involuntary activity for sustaining the life and any uncompromised event could disturb it severely. Those ill effects could result in chronic diseases such as asthma, upper respiratory tract infection, chronic obstructive pulmonary disorder (COPD), d bronchiectasis and breathing complications. The inhalation therapy is recommended for those patients and the Nebulizers are much useful in clearing the obstacles in the air ways. The current study focused on the evaluation of efficiency of the twin technique that enhances the respiratory efficiency in the chronic obstructive patients.

Keywords: Nebulization; chronic obstructive pulmonary disease; respiratory diseases; bronchiectasis, breathing.

1. INTRODUCTION

The breathing processes are the involuntary action that continuously required for sustaining the life and comprises two important steps namely, inhalation and exhalation respectively. Any obstruction on the airways could severely affect the breathing and disturbed the body functions throughout [1]. The obstructed normal breathing eventually results the compromised homeostasis and various diseases like chronic obstructive pulmonary disorder (COPD), upper respiratory tract infection, asthma and bronchiectasis [2]. Though the exercised could bring back the normal conditions, they are purely temporary solutions and the chemical methods are in hand for the treatment. COPD caused by the continuous irritants such as smoke, polluted air, childhood respiratory diseases and rarely, by genetic conditions

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also [3]. The inhalation therapy is the useful treatment option for the COPD using the Nebulizers [4 – 5]. The Nebulizers comprise the medicated fine mist that remove obstructs temporary and they are delivered in to the lungs directly [6-8]. This comprises a cup, air compressor and a mouthpiece or masks [10]. Most of them equipped with the batteries [11]. They are cost effective and [4, 10]

2. MATERIALS AND METHODS

The quantitative approach has been adopted for this study (Table. 1). The study was designed with the Quasi Experimental pre-test post (single group) based analysis. The study was conducted in General Hospital; Chennai was selected as the site for study with 30 subjects. The details about the respiratory rate, peak flow meter modified scale and pulseoxymeter was measured according to the standard methods [4-10]. The statistical analysis was done with the paired't' test and Chi Square (both independent) test was used for statistical analysis.

3. RESULTS

The study was conducted by the questioner and its reassessment in the patients. The demographic and social details were represented in Table 1.

Table 1. Details about the geographical and social aspects

Sl.no	Details of the Subjects	N	%
1.	**Age (years)**		
	<20	0	0%
	21-40	4	12%
	41-60	2	6%
	> 61	24	72%
2.	**Sex**		
	Masculine	15	45%
	Feminine	15	45%
3.	**Residential area**		
	Countryside	18	54%
	Out skirt of cities	10	30%
	City area	2	7%
4.	**Religion**		
	Hindu	22	66%
	Christian	3	9%
	Muslim	5	15%
	Others	0	0
5.	**Educational status**		
	Uneducated	10	30%
	Primary	13	39%
	a. Secondary	6	18%
	b. Higher secondary	1	5%
	c. Graduate	0	0
6.	Type of employment		
	a. Business	6	18%
	b. Farming	16	48%
	c. Daily wagers	8	32%
	d. Tech- persons	0	0
	e. Qualified persons	0	0
7.	Area of work		
	a. Businesses	0	0
	b. Farms	25	100%
	c. Daily wages	1	4
	d. Mining	0	0
	e. Gardening	2	4%
	Building construction	2	4%
	Others	0	0

Sl.no	Details of the Subjects	N	%
8.	Family income (Month-wise in Rs)		
	<2000	17	54%
	2001-4000	13	39%
	4001-6000	0	0
	6001 and above	0	0
9.	COPD details and duration& Bronchiectasis		
	Lesser than 6 month		
	0.5 - 1 year	0	0
	One - two year	4	12%
	Greater than 2 year	3	10%
	Patient's appearance	23	66%
10.	Thinner body	26	78%
	Moderate body	4	13%
	Overweight	0	0
11.	Details of unhealthy habits	1	4%
	Chewing tobacco	2	4%
	Alcoholism	23	69%
	Habit of smoking	0	0
	Use of drugs (Abuse)	4	12%
	Having above all habits		
12.	Allergic history	21	63%
	Dusting allergy	7	21%
	Allergy to drugs	2	8%
	Food- allergy		
13.	Using of alternative medicine	16	48%
	Yes	14	42%
	No		
14.	Use of inhalation device	21	63%
	Meter dose inhaler	9	36%
	Home use steam inhaler		
15.	Do you have any habit of early morning exercise like walking?		
	Yes	12	48%
	No	18	56%

Table 1 showed the details of the early morning exercise and the effectiveness. Only 7% of the patients did early morning exercise and 40% of them had adequately done it. COPD is the fourth cause for death globally and the present study showed that nebulizers improved the efficiency of the treatment. Is the fourth leading cause for respiratory related death worldwide? The nebulizers are much useful in their treatment and those results were concordant with the previous studies [4, 6, 11-14].

4. CONCLUSION

As conclusion, we recommend the usage of twin technique nebulization for improving the respiratory improvement in the respective patients.

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Available:https://www.nhlbi.nih.gov/health-topics/how-lungs-work
2. Rosalba Courtney. The functions of breathing and its dysfunctions and their relationship to breathing therapy. International Journal of Osteopathic Medicine. 2009;12(3):78-85. ISSN 1746-0689, DOI: https://doi.org/10.1016/j.ijosm.2009.04.002.
3. Available:https://www.uofmhealth.org/health-library/hw164553#:~:text=Alpha%2D1%20antitrypsin%20(AAT)%20is%20a%20protein%20normally%20found,obstructive%20pulmonary%20disease%20(COPD).

4. Dhand R, Dolovich M, Chipps B, Myers TR, Restrepo R, Farrar JR.COPD. 2012 Feb;9(1):58-72.
5. Tashkin DP. A review of nebulized drug delivery in COPD. Int J Chron Obstruct Pulmon Dis. 2016;11:2585-2596. Published 2016 Oct 18. DOI:10.2147/COPD.S114034.
6. Dolovich MB, Ahrens RC, Hess DR, Anderson P, Dhand R, Rau JL, Smaldone GC, Guyatt G, American College of Chest Physicians., American College of Asthma, Allergy, and Immunology. Chest. 2005 Jan; 127(1):335-71.
7. Turner MO, Patel A, Ginsburg S, FitzGerald JM. Bronchodilator delivery in acute airflow obstruction. A meta-analysis. Arch Intern Med. 1997;157(15):1736–1744.
8. Available:https://www.nhlbi.nih.gov/health-topics/bronchiectasis
9. D C Currie. Nebulisers for bronchiectasis. Thorax 1997;52(Suppl 2):S72–S74.
10. Available:https://www.momjunction.com/articles/nebulizers-for-babies_00480275/
11. Available:https://www.healthline.com/health/breathing-treatment#for-asthma
12. Flick MR, Moody LE, et al. Effect of nebulization of patients with chronic airway obstruction. BMJ Journal. 2011 Feb 4;69(9):453-458.
13. Summer W, Elton R. Terbutaline metered-dose inhalation vs metaproterenol by hand-held nebulization: a comparison in black inner-city COPD patients. British Journal of Medicine. 2010 june 30;45(5);43-55.
14. Rau PL. Effect of ultrasonic nebulization on arterial oxygen saturation inchronic obstructive pulmonary disease. International Journal of Pharmacology. 2009Apr5;42(5):564-575.