

AN ANALYTICAL STUDY OF COMPARISON FOR USER FRIENDLINESS OF NEBULIZER & ASTHMA INHALER AS A PEDIATRIC HEALTHCARE PRODUCT

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ABSTRACT

A nebulizer is a medical device used for the treatment of respiratory diseases like Asthma, COPD (Chronic Obstructive Pulmonary Disease) & Cystic fibrosis which converts liquid medication into mist or aerosol. When diseased person suffering with above infection inhales through the mouth the said liquid reaches in the form of mist or aerosol inside the lungs of a patient. Nebulizer use OXYGEN, COMPRESSED AIR or ULTRASONIC POWER to break up medical solutions & suspensions into small aerosol droplets that can be directly inhaled from the mouthpiece of the device.

KEYWORDS: Nebulizer, Pediatricians, Asthma Inhalers

INTRODUCTION

The nebulizer as a device is having consistently increasing demand due to increase in ASTHMA, COPD & Cystic fibrosis & number of elderly patients also. [Business wire (English) 06/13/2014]. The nebulizers are mainly used by Asthma patients. The patients may belong to any stage from infant to anyone who has difficulty using an asthma inhaler.

There are mainly two types of nebulizers classified by their functioning

- JET nebulizer
- ULTRASONIC wave nebulizer

Jet nebulizers are connected by tubing to a compressor that causes compressed air or oxygen to flow at high velocity through a liquid medicine to turn it into an aerosol which is then inhaled by the patient. Jet nebulizers are commonly used for patients in hospitals who are having difficulty in use of inhalers such as in serious cases of respiratory diseases or severe asthma attack. Jet nebulizers have low operational cost. Those patients who need to inhale medicine on a daily basis the use of MDI can be expensive. In present market many marketers are available with low weight Jet nebulizer as low as 635 gm.

Ultrasonic nebulizers are having an electronic oscillator who generates a high frequency ultrasonic wave, which causes the mechanical vibration of a piezoelectric element. The vibrating element is in contact with a liquid reservoir & its high frequency vibration is sufficient to produce a vapor mist. Ultrasonic nebulizer are not required to have air compressor hence their weight is as low as 170 gm. (OMRON NE-U17 & BEURER NEBULIZER IH30).

An asthma inhaler is a handheld device that delivers asthma medication straight into the airways. Asthma inhaler can deliver drugs in a variety of ways.

- Metered dose inhaler
- Dry powdered inhaler

A MDI delivers asthma medication through a small, handheld aerosol canister. The MDI has a chemical propellant that pushes the medicine into patient's mouth when patient press down on the inhaler. Dry powdered inhaler requires you to breathe in quickly & deeply to use properly. These asthma inhalers may be difficult to use during an asthma attack when patients can not fully catch a deep breath.

Many of the medications used to treat lung conditions are taken through inhalers, which allow you to breathe the drug directly into patient's lungs. Some inhalers work by releasing the medication as an aerosol jet when patient presses down the canister.

However it is very common for people to have difficulties using this type of aerosol inhaler (called as "puffer") so using it with a spacer often helps. A spacer is a large plastic or metal container with a mouthpiece or a face mask for small children at one end & a hole to fit the mouthpiece of patient's aerosol inhaler at the other end.

In some situation it is very difficult to get the medication patient need into his/her lungs. This often happens during a severe asthma attack, an exacerbation of COPD or in severe lung disease. Using nebulizer may be helpful for some people with severe asthma or COPD to give specific treatments in some other types of lung diseases.

OBJECTIVES

- To study the user friendliness of inhaler & nebulizer used in upper respiratory tract infection.
- To do the comparative analysis of user friendliness of inhaler & nebulizer in asthma patient.

RESEARCH METHODOLOGY

The research carried here was exploratory as well as descriptive in nature. In exploratory research design primary data was collected by taking personal interview through close ended questionnaire. Responded included were Pediatrician, general physician, nurses, parents of the patients in case of small children. In descriptive nature research secondary data was collected through journals, newspapers & research magazines.

DATA ANALYSIS

- Total 80 respondents were interviewed which included 40 pediatricians, 10 general physicians 20 nurses & 10 patients.
- The data collected was from multispecialty hospitals, private clinics, pediatric ward from government hospitals etc.

FINDINGS

- 80% of the doctors suggested that instead of asthma inhaler, nebulizer should be used as it is user friendly in handling & operating.
- 90 % of nurses said that whenever they are attending a child patient it is easier for them to use nebulizer compared to that of asthma inhaler.

- Parents whose wards were suffering from asthma were of the opinion that they prefer to use nebulizer because chances of mishandling are less in nebulizer as that of an asthma inhaler.

CONCLUSIONS

Nebulizer therapy is especially effective in delivering asthma medication to infants and small children and to anybody who is unable to use asthma inhalers with spacers. Nebulizer of new models (OMRON-MARNEU22V) minimizes medication waste & shortens treatment time. They are easy to carry because of their low weight (97 grams) & size.

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