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SPACER DEVICES: AN ADD ON PART FOR ASTHMA INHALERS

Delicia ES¹, K. Krishnakumar¹, K. Jayaprakash¹, L.Panayappan²

¹Department of Pharmacy Practice, St.James Collage of Pharmaceutical Sciences, Chalakudy, Kerala, India.

²St.James Hospital Trust Pharmaceutical Research Centre, Chalakudy, Kerala, India.

ABSTRACT

An asthma spacer is an add-on device used to increase the ease of administering aerosolized medication from a metered-dose inhaler (MDI). Asthma inhalers can deliver drugs in a variety of ways. Metered dose inhalers (MDIs) provide the drug through a small, handheld aerosol canister, dry powder inhalers require breathe in quickly and deeply, nebulizer deliver medication through a mouthpiece or mask. This article explain about the use of spacer in meter dose inhaler, its benefit and disadvantage.

Key words: Meter dose inhalers(MDIs), Dry powder inhalers(DPIs).

INTRODUCTION

An asthma inhaler is a handheld device that delivers medication straight into your lungs. You get the drug fester and with fewer side effects than pill or IV. An asthma spacer is an add-on device used to increase the ease of administering aerosolized medication from a metered-dose inhaler (MDI) [1]. The spacer adds space in the form of a tube or “chamber” between the canister of medication and the patient’s mouth, allowing the patient to inhale the medication by breathing in slowly and deeply for five to 10 breaths [2].

TYPES OF INHALERS

Metered dose inhalers (MDIs) provide the drug through a small, handheld aerosol canister. They work like a spray can. You push the inhaler, it sprays out the medicine, and you breathe it in. A tube-like gadget called a spacer can help kids or people with trouble breathing use an MDI more easily [3].

Dry powder inhalers (DPIs) require you to breathe in quickly and deeply. That can make them hard to use during an asthma attack when you can’t fully catch a deep breath. Read the instructions carefully if you get a different brand, because they vary widely and the new one may not work like your old one [4].

Nebulizers deliver medication through a mouthpiece or mask. They’re easier to use because you can breathe normally. That makes them good for children or people

with severe asthma who may not be able to use an MDI or DPI properly [5].

Spacer

Also known as aerosol-holding chambers, add-on devices and spacing devices, spacers are long tubes that slow the delivery of medication from pressurized MDIs [6]. Spacers should always be used with MDIs that deliver inhaled corticosteroids. Spacers can make it easier for medication to reach the lungs, and also mean less medication gets deposited in the mouth and throat, where it can lead to irritation and mild infections. The Asthma Society of Canada recommends that anyone, of any age, using a puffer, consider using a spacer [7].

While a spacer can make it easier to co-ordinate breathing in and activating an MDI, it can also make the MDI less portable because a spacer takes up extra space in a purse or a bag. However, inhaled corticosteroids are usually prescribed to be taken twice a day, so the spacer can be left at home for morning and evening use [8].

How to use the MDI with a spacer

1. Remove the caps from the inhaler and spacer. Shake the inhaler.
2. Put the inhaler into the open end of the spacer -- it’s opposite the spacer’s mouthpiece.
3. Breathe out completely.
4. Put the mouthpiece of the spacer between

5. your teeth and close your lips tightly around it.
 6. Press the inhaler canister once to release the medicine, which will be trapped in the spacer.
 7. Breathe in slowly and completely through your mouth. Some spacers, will make a horn-like sound if you breathe too quickly. This means you need to slow down on your next breath.
 8. Hold your breath for at least 10 seconds to allow the medicine to get to your lungs.
 9. Remove the spacer and breathe out slowly.
 10. Wait about a minute, then repeat for every puff your doctor tells you to take.
 11. Replace the caps on the asthma inhaler and spacer when you're done.
- If you have an MDI with a steroid, gargle and rinse your mouth with water or mouthwash after each use [9].

Benefits of spacer

A spacer is a tube that attaches to the inhaler and holds the medication until you can breathe it in. This makes the device easier to use and helps get the medication into your lungs. Not all inhalers are used with a spacer. Spacers with masks are available for use by small children or anyone else who can't breathe in through a standard spacer [10]. In order to properly use an inhaler without a spacer, one has to coordinate a certain number of actions in a set order (pressing down on the inhaler, breathing in deeply as soon as the medication is released, holding your breath, exhaling), and not all patients are able to master this sequence. Use of a spacer avoids such timing issues. Spacers slow down the speed of the aerosol coming from the inhaler, meaning that less of

the asthma drug impacts on the back of the mouth and somewhat more may get into the lungs. Because of this, less medication is needed for an effective dose to reach the lungs. Use of spacers may also reduce the risk of developing a yeast infection, known as oral thrush. Alternatively, rinsing the mouth after application of inhaled steroids will prevent oral thrush as well [11].

Disadvantage of spacer

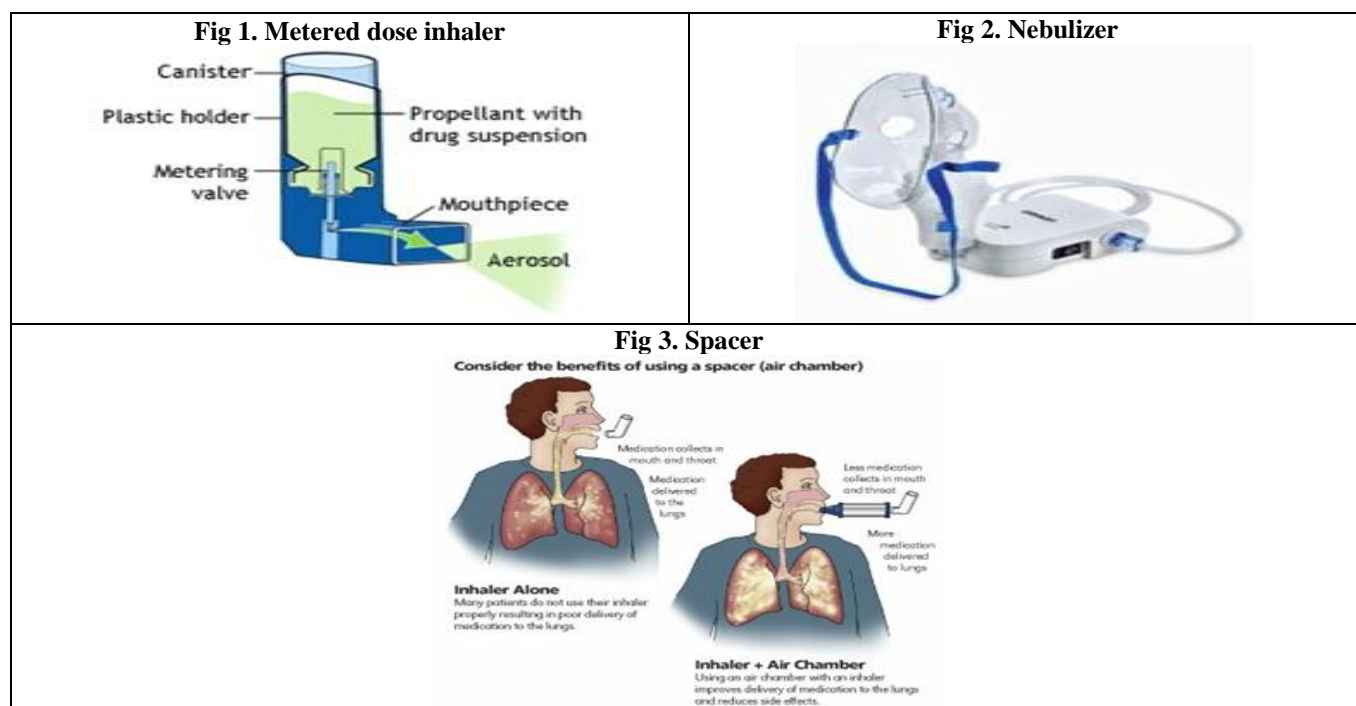
Whereas people with asthma can discreetly keep an MDI close-by at all times, the bulkiness of spacers can limit patient's utilization of spacers outside of the home. That being said, there are now smaller, easily separable spacers now available from various makers, which are more compact and so provide a more portable option [12].

Important remedies about spacer

Always follow the instructions that come with your spacer. As well:

- Only use your spacer with a ressurized inhaler, not with a dry-powder inhaler.
- Spray only one puff into a spacer at a time.
- Use your spacer as soon as you've sprayed a puff into it.
- Never let anyone else use your spacer..
- If your spacer has a valve that is damaged, or if any other part of the spacer is damaged, do not use it. The spacer will have to be replaced.

Some spacers have a whistle. Your technique is fine if you do not hear the whistle. However, if you hear the whistle, this means you should slow your breath down [13].



CONCLUSION

An asthma inhaler is a handheld device that delivers medication straight into your lungs. You get the drug faster and with fewer side effects than pill or IV. An asthma spacer is an add-on device used to increase the ease of administering aerosolized medication from a metered-dose inhaler (MDI). A spacer is a tube that attaches to the inhaler and holds the medication until you can breathe it in. This makes the device easier to use and helps get the medication into your lungs. Because of this,

less medication is needed for an effective dose to reach the lungs, and there are fewer side effects from corticosteroid residue in the mouth.

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None

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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