

Nebulizing Magnesium and other Medicinals

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Sometimes very sick people or even animals with a lung ailment do better when taking drugs by nebulization as opposed to orally, because then the embattled system doesn't need to go through breaking down the medications in the stomach and then delivering them to the lungs through the blood stream. With nebulization medicines get sprayed directly onto the lung tissues where they can most easily be absorbed locally by the lung and brachial cells.

Dr. Shallenberger says, "A nebulizer is able to convert a liquid into tiny bubbles that are so tiny that they can only be seen under a microscope. When these bubbles come out of the nebulizer, they are so small that they look just like smoke. And that's the magic of a nebulizer. The bubbles are so small that they can be inhaled deep down into the deepest regions of the lungs without any discomfort or irritation. It's a great way for asthmatics to get the medication they need to open up their lungs."

Few practitioners consider the systemic effects of nebulizers. When we hear from patients using nebulizers with pharmaceuticals that it makes them feel the side effects just as badly as when the doctors were giving the same drug intravenously in the hospital, we are actually hearing that the medicines are **not only being delivered to the lungs but also being delivered directly into the blood stream and systemically into the rest of the body.**

This is very important to understand and appreciate because it opens a wonderful delivery system that is important for certain populations like infants, children, intensive care patients and to all those who are trying to care for themselves or loved ones at home. And that's when Dr. Shallenberger thought, "Why not use the nebulizer delivery system to deliver treatments not just to the lungs but to the whole body?"

Most of the published research about nebulization is on standard usages like asthma but this delivery system **can be used to treat lung cancer, pneumonia, tuberculosis, as well as the influenza, chemical poisoning, and actually any syndrome requiring the administration of a medicinal.** For pediatricians and parents nebulizers are a God send because our babies cannot pop pills and we don't really want to be sticking needles in them every day. Transdermal medicine offers the most to the world of pediatrics with the administration of medicines through their baths and their breathing.

The great strength of nebulizers though is their capability of delivering medications and moisture directly to the tracheobronchial tree. Contrary to other treatment options, higher concentrations in respiratory secretions can be achieved with aerosol therapy. With the use

of this localized delivery system effective antimicrobials can have a direct effect on surface organisms in the bronchial system.

- 1) Nebulization thins secretions & mucus making it easier to expel pulmonary secretions
- 2) Nebulization makes coughing easier while lessening the need to cough
- 3) Nebulization keeps your windpipe & trachea lining and stoma moist & healthy
- 4) Nebulization moistens the air that goes into your lungs
- 5) Nebulization hydrates & moisturizes your nasal passages, mouth and throat

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Nebulizers are good for young children, people who have trouble using metered dose inhalers, and people who have severe asthma. Within 10 to 15 minutes, the medication is used up and symptoms are gone, or prevented for six to eight hours. Even babies can breathe the mist and nebulizer treatments are fast becoming pediatrician-approved alternatives to over-prescribed antibiotics.

Several devices are available to create the drug aerosol particles. These include jet nebulizers, ultrasonic nebulizers, metered-dose inhalers, and dry powder inhalers through which particles can reach the upper and lower respiratory tracts and be quickly absorbed into the bloodstream.

Aerosolized drugs have several advantages including quick onset of action and low incidence of systemic adverse effects.^[1] Delivery of aerosolized medications typically does not cause pain to the patient, and it is frequently a more convenient method of drug delivery. Studies show that the device used really doesn't matter, as long as it's used properly. All methods work just as well when the correct technique is used.^[2] Nebulizing is generally carried out for ten, twenty to thirty minutes each time and for best results one may need to nebulize up to five times a day.

Transdermal medicine delivers medications to the exact site of injury, pain or disease.

Transdermal medicine applied through a nebulizer is ideal for direct treatment to the lungs. Transdermal methods of delivery are increasingly being used because they allow the absorption of medicine directly through the skin and in this case we conceptualize the lungs as an inner skin. Such treatments ensure that medications reach the site of needed action directly; bypassing the stomach and liver meaning a much greater percentage of the active ingredient gets to target tissues.

At the Ohio State University Medical Center, pharmacists, respiratory therapists, and pulmonologists endorse what they call off-label nebulization. Off-label nebulization is a rapidly growing area of patient care and in time new research and practical experience will bring us much more information on how magnesium and other agents like sodium

bicarbonate, iodine, peroxide and glutathione can be administered directly into the lungs for many difficult-to-treat conditions. Even DMSO has been used in veterinarian medicine and naturopaths have used Tea Tree Oil from Australia, which is used topically as fungicide antiseptic and germicide. Eucalyptus oil has also been used forever because it is a known bronchial-dilator.

Nebulized Magnesium



Nebulization and Transdermal Medicinal Baths are Prime Therapeutic Options for Medication Administration for Children

7.5 gm in 100 ml = 7.5%

Magnesium chloride oil should be nebulized as an isotonic solution – delivering 7.5g magnesium chloride per 100ml of distilled water – closely equal to 3.5 tsp of magnesium oil per 100ml. Nebulization of magnesium is an alternative method of treatment for patients with pulmonary problems or infections, or for those undergoing bronchoscopy. Magnesium nebulized directly into the lungs offers all the same positive therapeutic effects that other types of administration methods do but concentrates the effects in the lung and bronchial tissues.

Nebulised inhaled magnesium sulfate in addition to 2-agonist in the treatment of an acute asthma exacerbation, appears to have benefits with respect to improved pulmonary function in patients with severe asthma. Heterogeneity between trials included in this review precludes a more definitive conclusion.[3] Nebulized magnesium is well tolerated without any adverse effects.[4]

Currently, the most widely accepted treatments for asthma include β 2-adrenergic agonists and corticosteroids. The search for treatment alternatives for bronchoconstriction in acute asthma has led to the use of nebulized magnesium.[5] Magnesium has been associated with cellular homeostasis and frequently acts as a cofactor in enzymatic reactions. It has

also been suggested that magnesium acts as a smooth muscle relaxant by interfering with calcium uptake. Research also suggests that **magnesium may have a counteracting effect against bronchoconstricting agents such as sodium metabisulfite, methacholine, and histamine.** Research into nebulized magnesium focuses on treating asthma and the potential to counteract bronchoconstricting agents.

A randomized, double-blind, controlled clinical study compared nebulized magnesium sulfate with nebulized albuterol in 33 patients with asthma (ages 12–60 years).[6] The study concluded that the serial doses of nebulized magnesium sulfate had bronchodilatory effects similar to those noted with nebulized albuterol.

Nannini et al.[7] examined magnesium sulfate as a vehicle for nebulized albuterol in treating acute asthma. The authors concluded that when nebulized magnesium and albuterol were used together, a higher peak flow could be achieved in comparison to albuterol plus 0.9% sodium chloride. The improvements could be seen within 10 minutes and lasted at least 20 minutes, and patients suffering from the most severe airway obstruction had a greater response to the combined treatment. Another study investigated the interactions between magnesium sulfate and sodium metabisulfite, a common preservative in food and drugs.[8] The investigators concluded that magnesium helped to minimize the bronchoconstriction effects from sodium metabisulfite.

These studies strongly suggest that nebulized magnesium would be effective for safe treatment of acute exacerbations of asthma, either as a sole agent or in combination with other medications. For this application I recommend only the *purest magnesium chloride*. Even the pharmaceutical and higher grades have heavy metal contamination so are not suitable.

Nebulized Bicarbonate

The **bronchial secretions during attack of bronchial asthma are acidic** and the acidity imparts stickiness to the secretions and moreover there is **high level of neuraminic acid**, which possibly correlates with the stickiness. Thus sodium bicarbonate is an excellent choice for nebulization offering it's powerful and instant pH changing effects. **Dr. Tullio Simoncini recommends aerosol use of bicarbonate for lung and bronchial adenocarcinoma.** He recommends putting **1 soup spoon sodium bicarbonate in ½ liter water and inhaling it with a fast inhaler in half an hour. Six days on six days off when in IV break phases.**

Dr. Lewis Nelson, a specialist in emergency medicine says, "Nebulized sodium bicarbonate has been shown to **provide symptomatic relief in patients exposed to chlorine**, and it is probably useful with all irritant gases that liberate acid. Through a neutralization reaction, the damaging effects of the acids are limited. Nebulized sodium bicarbonate should be used **in concentrations of less than 2% (which generally means about a 4:1 dilution of standard 8% sodium bicarbonate).**"[9]

approx 10 gm in 500 ml = 2%

Nebulized Peroxide

Hydrogen peroxide has been used for decades to conquer viral infections by thousands of doctors in thousands of patients all over the world. Hydrogen peroxide consists of a water molecule (H_2O) with an extra oxygen atom (H_2O_2). It is the extra oxygen atom that makes it so deadly for viruses. Nebulization is a new way of administering hydrogen peroxide therapy that is **almost as effective as the IV**. And better than the IV method, this new treatment can be **done at home, and is very inexpensive**.

Nebulized peroxide is an efficient route of getting this oxygen utilizing catalyst into the body via the rich network of blood vessels in the lungs. **This is not as strong a treatment as IV peroxide but it comes close**. Caution: Do not mix your own peroxide, this can be dangerous. If you feel bad after the peroxide, with flu-like symptoms, headache, fever, diarrhea, fatigue, etc, this is too strong a catalytic stimulation with peroxide. Consult your physician before using peroxide in a nebulizer.

Dr. Shallenberger testimony: "When my wife developed the first symptoms of flu, instead of immediately plugging her into a hydrogen peroxide IV, I had her **use the nebulizer for ten minutes every waking hour**. Using the nebulizer treatment, she was **able to get rid of the flu within 72 hours**. I knew I was on to something, because **IV hydrogen peroxide doesn't work much better than that**. So I bought a dozen nebulizers and began offering the treatment to my patients."

"Since then I have treated hundreds of cases of colds, flus, sinusitis, and bronchitis all with the same great results. And I found that the nebulizer treatments actually have an advantage over the IV therapy that I hadn't considered at first. And that is, that not only is the hydrogen peroxide being disseminated into the entire body through the lungs, it is also going directly to the areas of the body that are most affected by viruses – the sinuses, throat, bronchial tract, and lungs."

Nebulized Iodine

In some countries nebulizers are given to people by prescription only because they give a person direct access to the bloodstream and this is an indication that this is serious medicine we are dealing with, so caution is advised. With nebulizers we in part get the same effect as with injections, medications quickly diffuse directly into the blood stream. **Thus a nebulizer holds the capacity to save lives.**

When it comes to using iodine in a nebulizer special caution is needed. The choice of iodine is important because putting in **potassium, which is found in Lugol's, is dangerous**. Potassium chloride, another salt of potassium, is used for lethal injection so I recommend **only Nascent Iodine**. Nebulization with iodine offers an extremely strong therapy which can clear the lungs quite rapidly of infections. Therapeutic concentrations can be increased for

desired effect but it is recommended that dosages start at the low end unless there is an emergency situation. I would start my first iodine treatment with a weak solution, 3 – 5 drops and slowly increase to ten drops or more closely monitoring the experience. As long as the patient displays no discomfort or side effects concentration can be increased strongly especially when in a life threatening situation. One should expect much quicker and more dramatic results with iodine then with H2O2.

Nebulized Glutathione

Glutathione has many profound roles in the body. One role is to enable the liver to remove toxins, medications and other substances from the body. Without it, these substances cannot be removed properly. One puts a special small daily amount of glutathione in a nebulizer, which will facilitate toxin removal and possibly tissue repair. The glutathione level of the epithelial lining fluid is decreased in severe inflammatory lung diseases including in cases with Cystic fibrosis.

Glutathione in the epithelial lining fluid (ELF) of the lower respiratory tract is thought to be the first line of defense against oxidative stress. Inhalation (nebulized or aerosolized) is the only known method that increases GSH's levels in the ELF.[10]

Dr. Michelle Alpert, D.O says, "Because oral glutathione is not well absorbed, I have also begun to experiment with nebulized glutathione, which patients can take at home between detox drips. According to a study in Alternative Medicine Review in 2000, nebulized glutathione has had remarkable success in emphysema and other lung disorders such as asthma and bronchitis. It appears that inhalation may have a systemic effect. Some patients are having even greater success with this combination." [11]

In a case of a 95-year-old man with an acute respiratory crisis secondary to emphysema and apparent bronchial infection treatment with nebulized glutathione led to a rapid resolution of the crisis, as well as a marked improvement in the chronic course of the disease. This treatment has been used since for a number of patients with emphysema. The safety and bioavailability of this method of delivery have been established in human studies.[12]

Different people taking Nebulized Glutathione often have very different reactions. One person may tolerate Nebulized Glutathione well but not get the desired effect, another may have side effects or adverse reactions that make Nebulized Glutathione intolerable, and yet another may get the desired effect with no side effects.[13]

General Instructions

Procedure: The basic aim of a nebulizer is to facilitate a faster and more effective absorption of the medicine. This is achieved by breaking down the liquid medicine into very fine particles, which is inhaled by the patient. The first step is to add the liquid medicine to the

cup attached to the device. It is important to understand that these devices accept medicine in the liquid form only, and **medicine should be added at the time of usage and not before that.** If the doctor has prescribed more than one medicine for nebulization, **make sure if they can be mixed together or whether they should be taken separately.** Once the medicine is put in the cup, close the cup and connect its tube to the air compressor. Turn the compressor on and when the compressed air reaches the nebulizer cup, it will vaporize the medicine, creating a mist. The mist is inhaled by the patient, through the mouthpiece or face mask.

Take deep breaths and inhale the vapor completely. Tap the cup regularly to ensure the right dispensation of medicine and don't remove the mask, until the medicine is used up completely. It will take about 10 to 20 minutes to finish nebulization depending on what type of medicinal is used. Turn on the air pump and a mist will come from the mouthpiece. Place the mouthpiece in your mouth and breathe in slowly. At full inhalation, hold your breath for a 2-4 count to allow absorption in the lungs. If you are treating colds or sinus problems, you can also alternate breathing through your nose.

Special Note: **I have even heard of DMSO being used in combination with other medicinals just as it would be used topically on the skin.**

[1] Side effects wear off quickly but can include racing pulse, tremors, nausea and insomnia. **Nebulizer asthma treatments can also raise blood pressure and aggravate glaucoma.**

[2] http://kidshealth.org/parent/medical/asthma/inhaler_nebulizer.html

[3] Inhaled magnesium sulfate in the treatment of acute asthma. Blitz M, Blitz S, Beasley R, Diner BM, Hughes R, Knopp JA, Rowe BH

[4] Blitz M, et al. Inhaled magnesium sulfate in the treatment of acute asthma. Cochrane Database Syst Rev 2005 Jul 20;(3) CD003898.

[5] Mahajan P, Haritos D, Rosenberg N et al. Comparison of nebulized magnesium sulfate plus albuterol to nebulized albuterol plus saline in children with acute exacerbations of mild to moderate asthma. J Emerg Med. 2004; 27:215.

[6] Mangat HS, D. Souza GA, Jacob MS. Nebulized magnesium sulphate versus nebulized salbutamol in acute bronchial asthma, a clinical trial. Eur Respir J. 1998; 12:3414.

[7] Nannini LJ, Pendino JC, Corna RA et al. Magnesium sulfate as a vehicle for nebulized salbutamol in acute asthma. Am J Med. 2000; 108:193-7.

[8] Nannini LJ, Hofer D. Effect of inhaled magnesium sulfate on sodium metabisulfite-induced bronchoconstriction in asthma. Chest. 1997; 111: 858-61.

[9] <http://www.emedmag.com/html/pre/tox/0804.asp>

[10] <http://ecam.oxfordjournals.org/cgi/content/abstract/5/1/27>

[11] <http://www.prohealth.com/library/showarticle.cfm?libid=10906>

[12] Altern Med Rev 2000;5(5):429-431

[13] Reasons for inhaled GSH's effectiveness include its role as a potent antioxidant, and possibly improved oxygenation and host defenses. Theoretical uses of this treatment include Farmer's lung, pre- and postexercise, multiple chemical sensitivity disorder and cigarette smoking. GSH inhalation should not be used as a treatment for primary lung cancer. Testing for sulfites in the urine is recommended prior to GSH inhalation. Minor side effects such as transient coughing and an unpleasant odor are common with this treatment. Major side effects such as bronchoconstriction have only occurred among asthma patients presumed to be sulfite-sensitive. The potential applications of inhaled GSH are numerous when one considers just how many pulmonary diseases and respiratory-related conditions are affected by deficient antioxidant status or an over production of oxidants, poor oxygenation and/or impaired host defenses.