

Amphotericin B nasal lavages: Not a solution for patients with chronic Rhinosinusitis

It has been suggested that one of the most common types of sinusitis (Chronic Rhinosinusitis - CRS) is largely caused by the presence of *Aspergillus* and/or other airborne fungi growing in the sinuses of sufferers. A large group (116) of patients were selected for a double-blind and placebo controlled trial at several centres across Europe. One group were instructed on how to treat themselves with an Amphotericin B antifungal spray and the control group were treated with a placebo.

The results of the study showed no difference between those who received antifungal medication and those who did not. The authors claim that this is good evidence that nasal Amphotericin sprays are ineffective in the treatment of CRS. Despite it having been previously demonstrated that Amphotericin sprays are useful in reducing total fungal load in the sinus', this was not demonstrated in this study.

<http://www.aspergillus.org.uk/secure/articles/pdfs/17088142.pdf>

Catalases of *Aspergillus fumigatus* and Inflammation in Aspergillosis.

Inflammation is an important process during infection of host tissue with any pathogen. One way a normal host responds to the infection is by releasing hydrogen peroxide and other similar chemicals. *Aspergillus* releases enzymes called catalases and it is known that these enzymes can neutralise the peroxide, and it seems possible that that is one way *Aspergillus* can overcome the defences of the host on the way to establishing an infection. In order to find out if this is true this group have mutated the genes in *Aspergillus* that cause catalases to be made - there are three catalases (one produced by spores and two produced by the hyphae of the fungus) so there are three different mutant strains of *Aspergillus*, each one with a different gene 'knocked out'. When a strain was tested that had BOTH hyphal catalase genes 'knocked out' it was found to be less able to infect rats. The catalases are strong antigens for antibody production, as seen in those with chronic pulmonary aspergillosis.

It can therefore be concluded that the two hyphal genes (named *cat1* & *cat2*) are important for infecting *Aspergillus* i.e. they are *virulence factors*.

The same mechanism of resistance to infection seems to be widely used - sea corals have also been shown to use peroxidase activity.

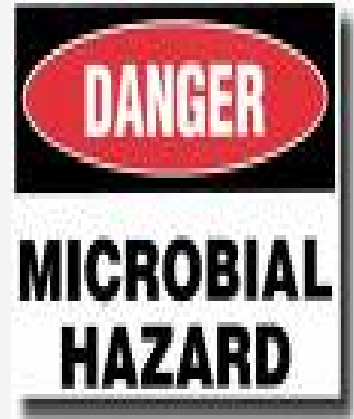
<http://www.aspergillus.org.uk/secure/articles/pdfs/17071635.pdf>

Antifungal interactions within the triple combination of amphotericin B, caspofungin and voriconazole against *Aspergillus* species

These three antifungal drugs have different mechanisms of action. This means that using these drugs in combination may well increase their effectiveness, as it is much less possible for a pathogen to develop two separate mechanisms of resistance at the same time.

This experiment looked at three different species of *Aspergillus* (*A. fumigatus*, *A. flavus* & *A. terreus*) and tested each for sensitivity to treatment with all 3 drugs at different concentrations. The result was that at low concentrations there was clear benefit to using the drugs in combination (synergism), but at higher concentrations the benefit disappeared (antagonism). The experiment was entirely carried out *in vitro* in laboratory plates so may not accurately predict what happens when used in a patient, but it does suggest that if all three drugs were used at the same time to treat a patient, care must be taken with the dose of each.

<http://www.aspergillus.org.uk/secure/articles/pdfs/17071635.pdf>



American Academy of Pediatrics releases Spectrum of Noninfectious Health Effects from Molds

This month, The American Academy of Pediatrics released its peer reviewed paper entitled *Spectrum of Noninfectious Health Effects from Molds*.

The paper discusses a variety of causal connection between mold and a variety of health effects including AIPH (acute idiopathic pulmonary hemorrhage) in infants. AIPH was studied by Dr. Dorr Dearborn in his Cleveland infant study.

While defense-oriented experts are quick to poke holes in previous studies (including Dr. Dearborn's) that show a relationship between AIPH and exposure to certain mold, this new paper makes it clear that the link is entirely plausible.

The paper also speaks to assessment, prevention, and other health effects.

POA has made available to its members this paper as we believe it is of critical import.

Click here for [FULL REPORT](#)

TABLE 3 Mycotoxin-Producing Molds and Their Health Effects

| Fungus | Mycotoxin | Adverse Health Effect |
|----------------------------------|----------------------|--|
| <i>Alternaria alternate</i> | Tenuazonic acid | Hepatotoxic and nephrotoxic, hemorrhagic |
| <i>Aspergillus flavus</i> | Aflatoxins | Hepatotoxic, carcinogenic |
| <i>Aspergillus fumigatus</i> | Fumitremorgens | Tremorgenic |
| <i>Aspergillus nidulans</i> | Sterigmatocystin | Hepatotoxic, carcinogenic |
| <i>Aspergillus ochraceus</i> | Ochratoxin A | Hepatotoxic and nephrotoxic, carcinogenic |
| <i>Cladosporium species</i> | Epididymosporic acid | Immunosuppressive |
| <i>Fusarium moniliforme</i> | Fumonisin | Neurotoxic, hepatotoxic and nephrotoxic |
| <i>Fusarium poae</i> | T-2 toxin | Hemorrhagic and immunosuppressive |
| <i>Fusarium sporotrichioides</i> | Trichothecenes | Causes alimentary tract aleukia (nausea, vomiting) |
| <i>Penicillium expansum</i> | Patulin | Nephrotoxic and carcinogenic |
| | Citrinin | |
| <i>Penicillium griseofulvum</i> | Griseofulvin | Hepatotoxic, carcinogenic, teratogenic |
| <i>Pithomyces chartarum</i> | Sporidesmin | Hepatotoxic; causes photosensitization, eczema |
| | Phylloerythrin | |
| <i>Stachybotrys chartarum</i> | Satratoxins toxins | Immunosuppressive, hematotoxic |
| | Verrucarins | Inflammatory, immunosuppressive |
| | Roridins | Causes dermatitis; hematotoxic, hemorrhagic |

These two tables were taken directly from the new research paper entitled, *Spectrum of Noninfectious Health Effects from Molds*.

TABLE 6 Guidelines for Pediatricians Considering Possible Illness Related to Damp, Moldy Indoor Spaces

| |
|--|
| When to consider indoor mold-related illness* |
| Chronic respiratory symptoms of unclear etiology |
| Poorly controlled asthma, perennial allergic rhinitis, or chronic sinusitis |
| Respiratory symptoms or recurrent influenza-like symptoms in a moldy environment |
| Suspected or diagnosed hypersensitivity pneumonitis, ABPA, or fungal sinusitis |
| Unexplained pulmonary hemorrhage, especially in infants |
| Assessing exposures to molds: helpful questions |
| Have you seen any mold or mildew on walls, floors, ceilings, or carpets, including your basement (evidence of discolored patches or cottony or speckled growth on walls or furniture)? |
| Have you noticed a musty or earthy smell indoors? |
| Has the home been flooded? |
| Is there any water-damaged wood or cardboard in the house? |
| Has there been a roof or plumbing leak, standing water in the home or areas with chronic dampness/moisture, including the basement? |
| Is there often condensation (fog) on the inside of the windows and/or cold inside surfaces? |
| Have humidifiers or air-conditioner drip pans been checked for mold overgrowth? |
| Are symptoms better away from the house? |
| Describe your basement dwellings and conditions at school or other places where you routinely spend time. |
| Environmental assessment |
| Work with an experienced industrial hygienist or investigator. |
| Methods: visual inspection, bulk sampling, and air sampling of visible or culturable fungal spores. |
| Serologic testing may be helpful in some settings.* |

* Physicians should also consider and rule out other possible non-mold-related etiologies. For symptoms attributable to mycotoxin ingestion, see text.

POLICYHOLDERS OF AMERICA

15 Orange Street
Charleston, SC 29401

Phone and Fax: 888-648-8823

E-mail:
info@policyholdersofamerica.org

We're on the web at:
www.policyholdersofamerica.org

POA's mission includes helping members get their legitimate insurance claims paid. We also fight for lower rates that better reflect the coverage offered in policies, champion legislation that discourages bad faith, and educate policyholders about the positions held by candidates on issues relating to insurance. We are not financed by lawyers, public adjusters or contractors. We work exclusively, and without compensation, for the benefit of the policyholder. We are a non-profit, 501c4.

The MORE you know about insurance, the faster you will get paid for your legitimate claim.

Association of Mold With Asthma Symptoms

Mark T. O'Hollaren, MD

Medscape Allergy & Clinical Immunology. 2007

Exposure to *Alternaria alternata* in US Homes Is Associated With Asthma Symptoms

Salo PM, Arbes SJ, Sever M, et al.
J Allergy Clin Immunol. 2006;118:892-898

Alternaria alternata is a saprophytic mold typically found in soil and plants, and is considered to be primarily an outdoor allergen. It has been associated with episodes of severe, life-threatening attacks of asthma, and sensitivity to *Alternaria* (ie, as demonstrated with a positive allergy skin test) has been associated with an approximate 200-fold increase in the risk of a life-threatening asthma attack.^[1] Sensitization to *Alternaria* has also been found to be more common in patients with asthma than in those without asthma.

Salo and colleagues collected data as part of the National Survey of Lead and Allergens in Housing study, and they surveyed a nationally representative sample of over 800 housing units inhabited by over 2400 individuals. They collected dust samples from bed, sofa, or chair, and from the bedroom, living room and kitchen floors, and analyzed for the presence of *Alternaria* using a polyclonal anti-*Alternaria alternata* inhibition assay.

They found a positive correlation between the levels of *Alternaria* in a given indoor environment, and the development of asthma symptoms in those inhabiting that environment. Of interest, they did not find such correlation between this mold and the incidence of allergic rhinitis (hay fever). They concluded that exposure to *Alternaria* in an indoor environment is associated with active asthma symptoms.

Viewpoint

This is an important study for several reasons. First, it builds on the increasing evidence that all allergens are not created equal. Namely, that some (eg, pollens) are more likely to cause symptoms in the upper airway (ie, allergic rhinitis), and some (such as *Alternaria*) are more likely to cause symptoms in the lower airway (ie, asthma). Thus, allergy to *Alternaria* is more likely to cause asthma symptoms than symptoms of allergic rhinitis. The latter has also been suggested by Gergen and Turkeltaub.^[2] Second, the study demonstrates that *Alternaria* is an important indoor allergen.

Given this allergen's reputation as a potent asthma trigger, we now need to be aware that indoor exposure is also important for patients with asthma.



Alternaria alternata

10 μ m