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Review Article

Thoughts on the Topic: Mold in the Air We Breathe and in Our Lungs

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Abstract

Despite advances in medicine, neither disease nor mortality rates are falling. On the contrary. Leaving Covid-19 and vaccinations aside, fungal infections - especially molds - are a growing problem. The spore concentrations in the air we breathe are obviously high, as are those in our rooms. What measures are indicated? The production of fungi should be reduced, air purification devices should become standard in homes, as should ionization devices, like refrigerators. If an infection has occurred, a treatment method is presented that is logical and effective: Inhalations with body-identical enzymes.

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Introduction

Anyone can do a little experiment: take the coffee grounds from a coffee machine and put them outside. After three days it starts to mold, after six days it is completely moldy. The mold can only come from the air.

A somewhat more complex experiment: use an air purifier that also measures the dust concentration in the room air in ppm (parts per million). First you close the windows and doors and wait: the measured base value drops to zero after a few hours. Then you open the windows and see how the dust in the room air rises above the limit value (in our case: 7 ppm). Conclusion: the so-called fresh air from outside may be pleasantly cool, but it is not clean. If we continue the experiment, we find that the air is cleaner after every rainfall, as the rain has obviously washed the dust into the ground. In a high-pressure area without rain and wind, on the other hand, the ppm value rises continuously to pathological levels. It also makes sense to use an air ionizer that produces negative ions, as dust and spores attach themselves to ions with an electron deficit (so-called positively charged ions). Air conditioning systems should be checked and cleaned regularly.

The findings are clear: the air we breathe is increasingly of poor quality, with a considerable proportion consisting of mold spores in addition to fine dust, tire abrasion, microplastics and nanoplastics. The bronchial tubes and lungs suffer because the environment there is favorable for mold: warm and moist.

Study

At the 29th French. Congress of Pneumonology in Marseille (January 2025), presentations were given on this topic [1]. Increasing bronchial obstructions, bronchiectasis, COPD and asthma with fungal sensitization were reported. In 2006, a new disease was defined: severe asthma with fungal sensitization (= "SAFS") [2]. Robin Reau from Hopital Bichat in Paris reported on a study (245 patients) with determination of pneumological parameters and IgE antibodies against moulds. SAFS patients were sensitized to:

- Aspergillus fumigatus 64 %
- Candida albicans 29 %
- Alternaria alternata 22 %
- Penicillium notatum 19 %
- Cladosporium herb. 12 %

At an average of 577 kUA/l, the IgE values of SAFS patients were significantly higher than those of other asthma patients at 145. SAFS patients were more likely to have cardiovascular comorbidities (27.5% vs. 15.3%), as well as frequent obstructive sleep apnoea (24.5% vs. 9.1%). In addition, humoral immunodeficiency was often found. Treatment with antimycotics did not prove successful; corticosteroids were effective instead. Specified biologics are also used [4-8], but these do not achieve convincing effects. Fungi are often resistant to antimycotics.

Aspergillus fumigatus

Aspergillus fumigatus has a cosmopolitan distribution. It is one of the most widespread species on earth. A long-term study from 1963 to 1991 in Cardiff/Wales measured an average conidia concentration of between 45 and 110 spores per cubic meter of air. The maximum concentration measured was over 100,000 spores in one cubic meter [9-12].

Aspergillus fumigatus produces various mycotoxins, in particular fumagillin, fumitremorgins, gliotoxin and sphingofungins. Aspergillus fumigatus is a human pathogenic fungus and can cause various groups of diseases:

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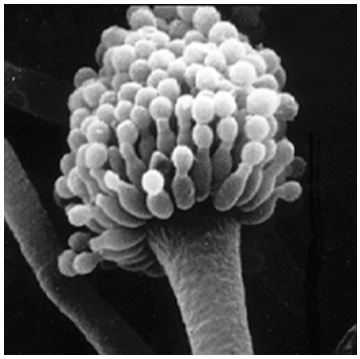

Figure 1. *Conidia carrier of Aspergillus fumigatus*

Allergies: This is mainly caused by bronchial asthma or bronchopulmonary aspergillosis, e.g. so-called farmer's lung.

Infections in immunocompromised patients can lead to invasive aspergillosis. This is a dangerous infection with a high mortality rate of between 50 and 95%. In this case, the inhaled spores are not killed due to the existing immunodeficiency and germinate. Consequently, hyphae and then mycelium form in the lungs and eventually spread throughout the body via the bloodstream (Figure 1).

Aspergillus niger, flavus and terreus

Aspergillus niger is pathogenic for humans. Due to its widespread nature, its spores are often inhaled by humans from their environment (e.g. dusty soil) [13]. Of the estimated 180 species of Aspergillus molds, about 40 species have health effects, especially on immunocompromised people

Aspergillus flavus spreads worldwide in the air and in the soil. It mainly forms colonies on seeds such as peanuts, cotton seeds, maize, cereals or pistachios. The fungus and the by-products it produces enter the human food chain via these seeds. A. flavus is one of the main producers of the dangerous mycotoxins aflatoxin B1 and aflatoxin B2 [14-16].

Aspergillus terreus is often found in soil and rotting plant material. The spores can survive the digestive tract unscathed. A. terreus can cause serious aspergillosis, the infection of which has a mortality rate of up to 100 %. It is resistant to amphotericin B [17].

Treatments

Conventional antimycotics have not yet achieved convincing results. Of course, corticosteroids are not a causal - although at least successful - therapy. A causal treatment would be to reduce the production of mold fungi on the one hand and their incorporation on the other. This would require the renovation of all older buildings with dark, damp rooms and affected bathrooms. Necessary, but difficult. To prevent the inhalation of spores, air purification devices would have to be installed in all occupied rooms. This is feasible. Finally, high-quality refrigerators should exist in every kitchen to prevent food from becoming moldy.

If an incorporation or infection has taken place and you want to eliminate the spread of fungi in the bronchi and lungs, there is an effective treatment method: enzymes. These are naturally able to dissolve fungal accumulations. They can be administered orally, anally or via inhalation localized in the pulmonary alveoli, which is the more effective way. A distinction must be made here between digestive enzymes and intracellular enzyme preparations. The former are less effective and cannot be inhaled. The latter can be used in any form and are produced by the company Citozeatec [18].

Enzyme treatment in concrete terms

The products are available as syrups. They can be given 50:50% = 10 ml mixed with water in an inhalation device. Depending on the severity of the fungal infection, inhalation is carried out once to three times a day. A treatment protocol is given here:

1. **Inhalation:** Mix 5 ml Citozym and 5 ml water and inhale.
2. **Orally:** 60 ml Citozym with 1 stick Propulzym, dissolved in 500 ml warm drinking water, drink in sips from 7.00 to 22.00.
3. **Anal:** Enteroclisma = anal enema with 15 ml citozyme and 15 ml good water

This protocol has proven itself over several years of treatment. With these enzymes, which are identical to the body's own enzymes, it does not matter what type of fungus is present in the individual case, as they are all tackled, reduced and, if possible, eliminated.

Conclusions

The air we breathe is becoming increasingly unclean. Infections of the lungs with fungi, especially molds, are therefore becoming a common problem, associated with COPD and asthma. Treatment is difficult and rarely successful, as corticosteroids do not have a causal effect.

What needs to be done? Of course, the production and spread of fungi must be curbed. This requires health policy and hygiene activities, e.g. the renovation of old buildings (including asbestos) and an end to geoengineering. A reduction of the high spore concentrations in the air we breathe is feasible with cleaning devices. These should be installed in all inhabited rooms.

If the child has fallen into the well, there is an effective method of treatment, namely with intracellular, nature-identical enzymes. They are most effectively used by inhalation.

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