Global Climate Change, its Impacts on Respiratory Health – Management through Exercise Interventions

by

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Introduction

The objective of the paper is "***to create awareness among people about alternative and complimentary methods to protect themselves from health impacts like allergies, asthma, chronic obstructive pulmonary disease etc., caused as a result of Global Climate change, rising temperatures, increasing Ozone levels and their worsening in the individuals with preexisting diseases.***

The Diseases cause the following changes in the airways:

- **Inflammation:** is a physiological process and plays the role of immunological defense against infection, injury or allergy.
- **Hyper secretion of mucus:** is a major pathological feature of diseases. It is the result of goblet cell hyperplasia in respiratory mucosa and is a prominent feature of inflammation. The amount of mucus hyper secretion varies with a range of stimuli including bacteria, particles and other irritants. It is a potential risk factor for an accelerated loss of lung function. In elderly people chronic mucus hyper secretion is a common feature. It increases risk of hospital admission as a result of lower respiratory tract infections.
- **Bronco spasm:** is an additional factor in asthma patients. The three factors together cause breathlessness.

Insights

- According to Dr. Sarah Herrick, a research fellow, Dr. Robin Gore, a consultant in respiratory medicine and research fellow and Dr. David Thornton, a senior Lecturer in the Faculty of life Sciences at Manchester University who were conducting research (2008- 2011) as a team into the factor of hyper-secretion of mucus , an abnormal production of mucus in the airways is a major contributor to the pathology of asthma as well as other debilitating respiratory conditions , such as cystic fibrosis and chronic pulmonary obstructive disease.

Insights-Contd..

- They opined that no mucus directed therapies are available for asthmatics and the factors that lead to excessive mucus secretion during both chronic and severe asthma are not understood.
- **In these circumstances, clearance of excess mucus becomes an extremely important factor for airway integrity.**

Methods

- Exercise is a potent medication in history. They are therapeutic tools and are mucokineses.
- They help in cleansing the adhesive mucus from mouth, nose, pharynx, the primary sites of colonization of pathogens ,sinuses, the way stations to the brain and the bronchial airways.
- They reduce C-reactive protein resulting in reduced inflammation.
- Exercises strengthen the remodeled airways and reset the biological aging process.

Methods

1. Upper airway passages cleaning exercises
   a) Take a glass of hyper tonic solution, keep it at the entrance of nasal passages, bend the body forward to about 70 to 80 degrees, slowly snort in the solvent, it goes in through the nostrils, up through the nasal passages, down in throat (pharynx) from where it takes a 'U' turn, enter the oral cavity and collects in the mouth. Spit it out. Blow out the nose forcefully. The excess mucus collected in nasal lining gets drained out.
2. Bronchial airways cleaning exercises
3. Physical, aerobic and yogic exercises

Upper airway passages cleaning exercises

- These exercises should be practiced with hypertonic solution i.e., a solution having greater osmotic pressure than that of cells or body fluids and draws water out of cells thus inducing plasmolysis.
- The solution should be warmer than that of body temperature i.e., more than 37.0 degrees Celsius.
- Better results can be achieved with 40 to 41.0 degrees Celsius.

Bronchial Airways Cleaning Exercises

- They are based on inspiratory and expiratory reserve volumes of the patients and forced expiratory techniques.
- They help in draining out total mucus from upper and lower airways.

Physical, Aerobic And Yogic Exercises

- Strengthen inspiratory and expiratory muscles and make the airways flexible.

Fact

- Any mucus related respiratory health problem commences from upper airway passages and spread to trachea bronchial tree as they constitute only one path way.
- The mucociliary clearance mechanism becomes defunct when excess and sticky mucus forms.
- Once they are cleaned, the defunct cilia become active land ciliate mucus towards nasal passages and it can be blown out easily.

Result of Exercises

- The bronchial airways cleaning exercises help in draining out total mucus from airways.
- The respiratory and other diseases originating from its pathway come under control.

Conclusion

The exercises are based on the concept

"***Once, the offending factor , the excess mucus is removed, the origin of it the inflammation gets resolved".***

Observation by Dr Vandana

- Dr Vandana is the editor of **New Approaches to Medicine And Health**. In her editorial note of the **Namaha journal**, volume 18,issue 3,15th October 2010 she has quoted as follows:
- "The article is the result of a search by the author to cure himself of a crippling asthma, sinusitis and resultant conjunctivitis. He left his legal practice to pursue health. He succeeded. Now at the age of 72 he is fitter than a 40 year old. He hopes to spread the message that it is possible to live without repeated courses of antibiotics, bronchodilators or nebulisers if you are willing to do exercises."