LETTER TO THE EDITOR

Urgent Need for Local Guidelines on Nutritional Supplementation in Indian Patients with Chronic Respiratory Diseases

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Abbreviations used in this Article

COPD = Chronic obstructive pulmonary disease; DHA = Docosahexaenoic acid; ILD = Interstitial lung diseases; ONS = Oral nutrition supplements; PUFA = Omega-3 polyunsaturated fatty acids.

Dear Editor,

The role of diet and nutrition can significantly impact the development, progression, and outcomes of many respiratory diseases, including chronic obstructive pulmonary disease (COPD) and interstitial lung diseases (ILD). All chronic respiratory diseases have an element of systemic inflammation which promotes catabolism and promotes muscle breakdown. Other comorbidities, hyperinflated lungs pressing on the stomach, and pharmacotherapy for respiratory diseases can all cause a decrease in appetite and make matters worse. It has been shown beyond doubt that muscle mass and overall nutrition status of the patient are independent risk factors for exacerbations and worse outcomes in COPD.[1] Many of the Indian patients are vegetarian and the majority have food fads which makes our population very vulnerable to malnutrition. There is this constant fixation and myth with foods causing an increase in phlegm and cough, which leads to a lot of patients avoiding common nutritious food items like milk, milk products, rice, and certain fruits. The management of chronic respiratory diseases in the Western world is much more structured. Nutritional advice is a part of outpatient and discharge prescriptions and oral nutrition supplements (ONS) are commonly prescribed. Data from India show that this is not commonly followed in our country and many patients with chronic respiratory diseases continue to eat a sub-optimal diet.[2]

Different dietary patterns have been associated with the risk of respiratory diseases. Studies have shown that the Mediterranean diet can offer protective benefits against allergic respiratory conditions. Studies have revealed a significant correlation between following the Mediterranean diet and improved asthma control.[3] Omega-3 polyunsaturated fatty acids (PUFA) from marine sources and supplements have been shown to have anti-inflammatory properties by affecting cellular mechanisms and altering the synthesis of eicosanoids.[4] Higher levels of docosahexaenoic acid (DHA) in serum have been linked to a decreased risk of developing COPD.[5] Additionally, research suggests that vitamin C may play a crucial role in COPD pathogenesis and management. It has been demonstrated that vitamin C supplementation in mice unable to synthesize it prevented smoke-induced emphysema, restored damaged lung tissue, and reduced oxidative stress associated with smoke-induced emphysema.[6] Respiratory infections play a significant role in the progression and exacerbation of COPD and asthma. Vitamin D has been shown to have a protective effect against the susceptibility to and severity of respiratory infections. Active vitamin D [1,25 (OH)2D] can influence the production of antimicrobial defensins, which help in bacterial killing and in promoting wound repair. Vitamin D deficiency can impact the onset, progression, and exacerbation of respiratory infections, asthma, and COPD.[7] Many Indian patients are grossly deficient in vitamin D. Many Indian patients do not eat these micronutrients in appropriate quantities due to sociocultural factors.

At the other end of the spectrum is obesity. India is unfortunately home to an ever-increasing obese population. Obesity also adversely affects patients with chronic lung diseases and is associated with worse outcomes and frequent exacerbations. Sarcopenic obesity refers to the combination of obesity and muscle wasting. In the developing world where protein intake is much lesser than our Western counterparts, sarcopenic obesity is very common, as our diets are carbohydrate predominant.

Exacerbations of any chronic respiratory disease can lead to a state of systemic inflammation. Additionally, factors which characterize an acute exacerbation like, loss of appetite, fever, decreased physical activity, a decrease in energy balance, heightened respiratory effort, and the use of systemic steroids often add fuel to fire and make the cachexia-sarcopenia cycle

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worse. The relationship between tuberculosis and malnutrition is well established. Tuberculosis can make a person more susceptible to malnutrition, while malnutrition significantly raises the likelihood of developing active tuberculosis by 6–10 times. Malnutrition is also linked with increased rates of tuberculosis relapse and mortality.[8]

The relation between nutrition and respiratory disorder cannot be underplayed. Owing to the unique dietary patterns and food fads in our country, it is imperative to have local guidelines which guide our patients with chronic respiratory diseases and dietary practices. Oral nutrition supplements are expensive and often out of reach of many Indian patients. Hence, guidelines should focus on indigenous local methods to improve the nutritional status of our patients. The onus is on national bodies like the National Council of Chest Physicians and the Indian Chest Society to formulate guidelines regarding nutritional optimization and supplementation in Indian patients. Just as there are local guidelines on vaccination, a similar document on nutrition optimization would be a very welcome step and help in decreasing respiratory mortality and morbidity.

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