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THE IMPORTANCE OF VITAMIN D STATUS ON LUNG FUNCTION IN ASTHMATIC CHILDREN

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Vitamin D is a potent immunomodulator capable of dampening inflammatory signals in cells involved in the allergic response including asthma. However, evidence supporting a link between low vitamin D levels in children and higher risk of asthma exacerbations and poor lung function is inconsistent. The objective of this clinical trial was to investigate the potential role of vitamin D status in asthmatic children following a Mediterranean diet intervention. Greek asthmatic children aged 5-12 years old (51.6% male, 48.4% girls) were recruited from a pediatric asthma clinic in Athens, Greece and randomized into two groups. The intervention group consumed a Mediterranean diet plus two meals of fatty fish per week (≥ 150 g cooked filleted fish/meal) for six months and the control, their usual diet. Pulmonary function and bronchial inflammation were assessed using spirometry and Fractional exhaled Nitric Oxide analysis (FeNO). Serum vitamin D status was measured using Enzyme-Linked Immuno Assay (ELISA). Vitamin D deficiency was defined at serum 25-OH D < 25 ng/mL. At baseline, 64% of children (61% girls, 39% boys) were deficient in vitamin D. Multiple linear regression model adjusted for confounding factors of age, sex, regular physical activity and BMI showed that children in the intervention group with sufficient plasma vitamin D levels at baseline had increased FEV1/FVC by 4.89 units ($\beta = 4.89$; 95% CI: 1.19-8.61; $p = 0.013$) and FEF25-75% by 12.83 units ($\beta = 12.83$; 95% CI: 4.27-21.40; $p = 0.006$) as compared to the control group. No associations were observed for children deficient in vitamin D or for FeNO. In conclusion, consumption of Mediterranean diet supplemented with fatty fish significantly improved pulmonary function in asthmatic children with plasma vitamin D levels ≥ 25 ng/mL. More intervention studies are recommended to support the promising findings and to further clarify the role of vitamin D status in the management of asthma in children.

Biography

Maria M Papamichael is a Registered Dietician/Sports Nutritionist with the British Dietetic Association who has dedicated her life in educating people, the importance of good nutrition and exercise in the prevention and management of disease as well as in improving health and well-being. She completed her masters in Human Nutrition/Sports Nutrition (PhDc) from La Trobe University, Australia. She is a Specialist on the Mediterranean diet and asthma. She has undertaken a PhD research project at La Trobe University investigating the prophylactic potential of a Mediterranean diet enriched with fatty fish in the management of asthma in children.

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