

Vitamin A, zinc and visual function among inner city adolescents with moderate-severe asthma

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The purpose of this study was to test the hypothesis that contrast sensitivity as a measure of visual function correlates with serum vitamin A and zinc levels among inner city adolescents with chronic asthma.

Methods: Cross-sectional, case control study design. Adolescents with confirmed diagnosis of asthma (cases) controlled with inhaled corticosteroids were consecutively enrolled for study. Visual function was measured by Snellen acuity and Peli-Robson contrast sensitivity. Serum levels of vitamin A and zinc were ascertained by conventional laboratory methods.

Results: Thirteen asthmatic and healthy age matched controls were enrolled for study. All subjects demonstrated a corrected Snellen visual acuity of 20/25 or better in each eye. Mean subject age was 14.08 and 13.88 years for cases and controls respectively. Mean combined (right and left eyes) contrast sensitivity (CS) score was statistically lower in cases vs. controls ($p = 0.0002$). Mean vitamin A (retinol) and zinc serum levels were found to be statistically reduced in cases vs. controls ($p = 0.0278$ and $p = 0.0107$ respectively). Correlation between combined CS scores and serum levels of vitamin A and zinc among subjects with asthma was not statistically significant.

Conclusions: In our study sample, serum vitamin A and zinc are reduced in adolescent asthma. Visual contrast sensitivity was found to be reduced among subjects with asthma in a manner not correlative to vitamin A or zinc serum levels.

Biography

Gaynes holds doctorate degrees in both pharmacy and optometry as well as a graduate degree in pharmacology from the Indiana University Medical Sciences Program. He holds a joint appointment at the Department of Veteran Affairs Medical Center, Hines, IL and Loyola University Stritch School of Medicine Department of Ophthalmology, Maywood, IL.

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