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Astigmatism is associated with allergic conjunctivitis in children who attended an urban school exposed to air pollution

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We first examined the association of ocular refractive error with allergic conjunctivitis in school children and then examined this association in children attending a suburban school and an urban school. We enrolled 426 children attending a primary school in a suburban area and 550 children attending a primary school in an urban area which had a higher level of air pollution. Allergic conjunctivitis was defined as the diagnosis of this condition at any time during a child's life. The ophthalmic examinations included measurements of visual acuity and refraction and a slit lamp examination. Skin prick tests were also performed at each school during 2018. The significance of associations was determined by calculation of odds ratios (ORs) and 95% confidence intervals (CIs). Astigmatism (increase of 1 cylindrical diopter) was associated with allergic conjunctivitis in children overall (OR = 1.287, 95% CI = 1.010 to 1.642) and in children attending the urban school (OR = 1.440, 95% CI = 1.056 to 1.964), but not in children attending the suburban school (OR = 1.031, 95% CI = 0.671 to 1.548). Allergic conjunctivitis also had a higher prevalence among children attending the urban school. The urban school had higher levels of air pollutants than the suburban school. Skin prick tests indicated that the major allergens in children with allergic conjunctivitis were house dust mites and various types of pollen. Astigmatism is associated with allergic conjunctivitis in children attending an urban school, but not a suburban school. This result may be explained by a higher level of air pollution at the urban school.

Biography

Yangho Kim is a Professor in Department of Occupational and Environmental Medicine, Ulsan University Hospital, University of Ulsan College of Medicine in Korea. He graduated from College of Medicine, Kumamoto University, Japan in Occupational Medicine as a PhD. He is also a family medicine specialist. He has main research interest in environmental health issues, particularly environmental effects of air pollution on children's health problems such as allergic disease.

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