Title: Hospital admission in adults with asthma exacerbations: Do demographic factors play a role?

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Body: Aim: To determine whether demography affects hospitalisation in asthma exacerbations in adults.
Methods: We included 100 asthmatics admitted with an acute exacerbation over 14 months; matched for age and sex with a 100 well-controlled asthmatics from asthma clinic. Information on sociodemographic variables, clinical and laboratory data was collected. Acute and convalescent (at 6 weeks) titres of serum immunoglobulin E (Se Ig E) and serum eosinophil count were taken. SPSS was used for statistical analysis.
Results: The study population was 73% female and the median age was 49 years. Univariate analysis using t-test and Chi-square showed a significant difference in compliance (p<0.0001), smoking status (p=0.007) and hospitalisation in the previous year between controls and cases (p=0.0001). There was no significant difference in: influenza immunisation (p=0.105), exhaled CO (p=0.85), BMI (p=0.27), Se Ig E levels (p=0.517), history of atopy (p=0.637), family history of atopy (p=0.121), level of education (p=0.210), age of asthma onset (p=0.320) and pets at home (p=1.0). The mean decrease in Se Ig E between acute and convalescent titres was 36.1%. There was no correlation between % predicted PEFR on admission (as a measure of severity) with length of stay (p=0.376), white cell count (p=0.165), CRP (p=0.199), or Se IgE (p=0.767), however this was negatively correlated with eosinophil count (p=0.045). Conclusions: A history of previous hospitalisation, non-compliance and smoking are significant risk factors for asthma exacerbations requiring hospital admission. An increased eosinophil count correlates with severity of exacerbation.