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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.