**Female sex is associated with increased risk of early readmission with asthma in Staffordshire children**

Background:

Asthma is the commonest medical reason for a child to be admitted to hospital in the UK.. At our centre, readmissions are uncommon but still occur. We undertook a retrospective analysis to determine whether there were predictors of readmission in these children

Methods:

We used purposeful sampling to retrieve the medical notes of 35 children who were readmitted to hospital within 90 days following an admission for asthma. We randomly selected 35 children who were not readmitted. We recorded the following admission data for all children: age, gender, ethnicity, history of eczema, hayfever or rhinitis, parental smoking status, pet ownership, number of siblings, previous admissions, postcode, age-corrected respiratory rate, heart rate, presence of recession, and oxygen saturations in air. We also recorded length of stay, use of nebulisers, antibiotics, whether the child was reviewed by the respiratory team and the presence of a personal asthma action plan. We used forwards stepwise logistic regression to determine any factors associated with readmission at 30 (early) and 90 days (late).

Results:

At 30 days only female gender (p=0.002) and personal history of eczema (p=0.063) were associated with readmission. One third of girls were readmitted by 30 days (n=8), compared to less than 5% of boys (2/45) (p=0.001). By 90 days, the effect of gender had become insignificant but history of previous admission (p=0.018) and age (p=0.073) were modestly associated with readmission. Even following correction for age, the initial physical findings were not predictive of readmission.

Conclusions:

This small study demonstrates that female sex is associated with increased risk of early readmission with asthma. The physical findings at admission and provision of education or an asthma plan did not significantly influence the readmission rate. Although the numbers are small, these observations requires further study in larger cohorts.