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Title: Smoking, haemophilus influenzae and hospital readmission

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Body: Background: Patients with chronic lung diseases are well known to have colonisation of lower respiratory tract with Haemophilus Influenza (HI). D Roberts et al have demonstrated increased growth of HI invitro in the presence of nicotine¹. However, it is not known if that leads to increased risk of clinical infection requiring hospital readmission. Hypothesis: Smoking increases the risk of acute clinical infections and hospital readmission due to HI. Methods: Retrospective study of adult patients admitted with acute HI infection over a 2 year period in an acute teaching hospital setting. Results: N= 133, mean age 70 yrs., male 57%, Smokers 89%; Respiratory co-morbidities 83% (COPD 79%, Bronchiectasis 7%, Asthma 7% and Combined 7%). Current smokers had increased risk of recurrent admissions 17/29(59%) compared to Ex-smokers 33/89(37%). P = 0.05 Fisher's exact test. Patients with >40 pack years smoking history had increased risk of recurrent admissions 34/63(54%) compared to <40 pack year group 15/50(30%). P = 0.01 Fisher's exact test. Smokers with background chronic lung disease had a tendency to have a higher number of recurrent admissions (46% vs 25%), but this was not statistically significant. P = 0.09 Fisher's exact test. Conclusions: This study shows a significant association with smoking and increased HI related hospital readmissions. Smokers should be informed of this risk and strongly advised to quit smoking. Reference: 1. Effect of tobacco and nicotine on growth of Haemophilus influenzae in vitro; J Clin Pathol. 1979 July; 32(7): 728–731.