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Resurgence of tuberculosis in an inner-city general practice in the United Kingdom

S. Swain*, A. Hina, A. Khan

Blenheim Medical Centre, Luton, UK, Luton, United Kingdom

Background: Our Practice is an innercity practice with a total of 11,900 registered patients and 60-70% of our patients are of south Asian origin. We all felt that the number of patients being diagnosed with TB had increased considerably over the last 10 years. We thought it would be good to consolidate the figures and shed light on this infectious disease.

Methods & Materials: Retrospective audit using the search feature on system one. Our search criteria included all the reed codes for TB in the last ten years.

Results: The incidence of TB is certainly higher than the UK figures. 57 in 100,000 compared to 13.8 in 100,000. Majority of people affected are between the ages of 21 and 60. People of Pakistani and African-Caribbean descent are the most infected. A lot of patients gave no history of being in contact with TB. Cough, cervical lymphadenopathy and chest pain remain the most common occurring symptoms. Every individual presenting with cough for more than 6 weeks should be considered high risk. TB should be ruled out along with Asthma, GORD & COPD taking the clinical picture into consideration. The trend shows either patients tend to get diagnosed with in the first 3 months or 9 months after they first present. It is worrying and maybe we need to look at why between the months of 3 and 9 we are not diagnosing more patients. In the primary care setting, Chest X-ray and T-SPOT testing remain the most useful investigations in detecting TB. Sputum cultures have a roll and should also be routinely undertaken.

Conclusion: A lot of patients gave no history of being in contact with TB. This shows history taking can be unreliable sometimes and especially when asking for TB as it is still considered a taboo. The trend shows either patients tend to get diagnosed with in the first 3 months or 9 months after they first present. pulmonary TB represents 61% of all the TB diagnosed in our GP practice.

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Association between influenza and pneumococcal carriage in patients with severe acute respiratory infection in Malawi

A. Ho^{1,*}, D. Everett¹, M. Menyere¹, M. Chilombe¹, J. Mallewa¹, R. Heyderman¹, N. French²

¹ Malawi Liverpool Wellcome Trust Clinical Research Programme, Blantyre, Malawi

² Institute of Infection and Global Health, Liverpool, United Kingdom

Background: A substantial proportion of Influenza morbidity and mortality is due to secondary pneumococcal infection. Although the synergistic interaction between influenza and pneumococcal disease is well studied, the interplay between influenza and nasopharyngeal carriage of *Streptococcus pneumoniae* remains unclear. We test the hypothesis that influenza infection increases susceptibility of pneumococcal carriage in a high HIV prevalence setting.

Methods & Materials: From January to December 2011, patients with severe acute respiratory infection (SARI), defined as fever (>38 °C), cough or sore throat, requiring hospitalization, and symptoms <7 days were enrolled in the sentinel influenza surveillance at Queen Elizabeth Central Hospital in Blantyre, Malawi. Demographic and clinical information were recorded; nasopharyngeal aspirates were obtained to detect influenza, *S. pneumoniae*, and 19 additional respiratory pathogens by real-time reverse transcriptase polymerase chain reaction. We explored the relationship between influenza infection and pneumococcal carriage using logistic regression analysis.

Results: Of 511 SARI cases enrolled, 255 (50%) were male, and 155 (57%) were children (aged <15 years). 11% children and 39% adults were HIV-positive. Influenza was identified in 72 (14%) (children 9%, adults 19%) and *S. pneumoniae* in 342 (69.6%) individuals (children 78%, adults 60%). Influenza had a bimodal peak (April and July). In contrast, pneumococcal carriage prevalence was highest from September to January. Individuals with a positive influenza PCR had a lower risk of pneumococcal carriage (odds ratio (OR) 0.51, 95% CI 0.30-0.86). A strong negative association was also demonstrated between presence of Coronavirus OC43 and *S. pneumoniae*. Independent risk factors for carriage were young age and hot season. The effect of influenza infection on carriage disappeared after adjusting for age, sex, HIV status, seasonality and the presence of coronavirus OC43 (adjusted OR 0.71, 95% CI 0.40-1.26, p = 0.25).

Conclusion: Contrary to our hypothesis, there was a trend towards lower pneumococcal carriage in subjects with influenza infection. This observation was most likely confounded by age and season. We plan to further characterize this relationship by incorporating surveillance data from 2012-2013, ascertaining pneumococcal colonization density using quantitative PCR for *lytA* gene, and examining the novel finding of the inverse association between Coronavirus OC43 and pneumococcal colonization.

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