84. **Siziya S**, Rudatsikira E, Muula AS, *et al*. Predictors of cigarette smoking among adolescents in rural Zambia: results from a cross sectional study from Chongwe district. *Rural Remote Health* 2007;**7**:728.
85. **Szabo E**, White V, Hayman J. Can home smoking restrictions influence adolescents' smoking behaviors if their parents and friends smoke? *Addict Behav* 2006;**31**:2298–303.
86. **Tyc VL**, Hadley W, Allen D, *et al*. Predictors of smoking intentions and smoking status among nonsmoking and smoking adolescents. *Addict Behav* 2004;**29**:1143–7.
87. **Vink JM**, Willemsen G, Boomsma DI. The association of current smoking behavior with the smoking behavior of parents, siblings, friends and spouses. *Addiction* 2003;**98**:923–31.
88. **Wen X**, Chen W, Muscat JE, *et al*. Modifiable family and school environmental factors associated with smoking status among adolescents in Guangzhou, China. *Prev Med* 2007;**45**:189–97.
89. **Withers NJ**, Low JL, Holgate ST, *et al*. Smoking habits in a cohort of UK adolescents. *Respir Med* 2000;**94**:391–6.
90. **Yorulmaz F**, Akturk Z, Dagdeviren N, *et al*. Smoking among adolescents: relation to school success, socioeconomic status nutrition and self-esteem. *Swiss Med Wkly* 2002;**132**:449–54.
91. **Zhang L**, Wang WF, Zhou G. A cross-sectional study of smoking risk factors in junior high school students in Henan, China. *Southeast Asian J Trop Med Public Health* 2005;**36**:1580–4.
92. **Office for National Statistics**. *Mortality Statistics—Deaths Registered in 2008*. London: Office for Public Sector Information. 2009. <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15096>.
93. **Health and Social Care Information Centre**. *Drug Use, Smoking and Drinking among Young People in England in 2008*. London: Health and Social Care Information Centre, 2009.
94. **Huang HL**, Hsu CC, Magnus JH, *et al*. Perceived smoking prevalence at school-level and children's smoking initiation: a multi-level analysis of a cross-sectional data in Taiwan. *Health Policy* 2008;**86**:213–21.
95. **Newell S**, Girgis A, Sanson-Fisher R. The accuracy of self-reported health behaviors and risk factors relating to cancer and cardiovascular disease in the general population: a critical review. *Am J Prev Med* 1999;**17**:211–29.
96. **Mayhew KP**, Flay BR, Mott JA. Stages in the development of adolescent smoking. *Drug Alcohol Depend* 2000;**59**:S61–81.
97. **Avenevoli S**, Merikangas KR. Familial influences on adolescent smoking. *Addiction* 2003;**98**:1–20.
98. **World Health Organization**. *WHO Framework Convention on Tobacco Control*. Geneva: World Health Organization, 2003.
99. **Dalton MA**, Bernhardt AM, Gibson JJ, *et al*. Use of cigarettes and alcohol by preschoolers while role-playing as adults. *Arch Pediatr Adolesc Med* 2005;**159**:854–9.
100. **de Leeuw RNH**, Engles RCME, Scholte RHJ. Parental smoking and pretend smoking in young children. *Tob Control* 2010;**19**:200–5.

Journal club

Genetic susceptibility and resistance to tuberculosis

This study investigated possible biomarkers of susceptibility and resistance to *Mycobacterium tuberculosis*, identifying gene expression profiles associated with active tuberculosis (TB). Among a South African cohort, genome-wide transcription profiles of whole blood were obtained from 33 TB patients, 34 healthy donors latently infected with *M tuberculosis* (LTBI) and 9 healthy non-infected donors (NIDs). Cluster analysis of genes demonstrated pronounced differences among TB patients compared with the LBTI and NID groups, with no significant difference in clustering between the LBTI and NID groups.

Reverse transcriptase PCR identified Fc γ receptor 1B (FCGR1B) as the most strongly differentially expressed gene in the TB group compared to LBTI. This gene, combined with four other most prominently differentiated genes—CD64, Lactoferrin, guanylate binding protein 5 and Granzyme A—allowed discrimination between TB and LTBI groups with a sensitivity of 94% (30/32 patients) and specificity of 97% (33/34 patients). Functional annotation clustering demonstrated distinct differences between TB and LBTI groups with increased expression of macrophage-associated genes and reduced expression of natural killer-associated genes as well as reduced apoptosis in TB patients compared to the LBTI group.

This research demonstrates the importance of genetic control over the innate immune system in the development of active TB. Defining a genetic biosignature of resistance or susceptibility to *M tuberculosis* identifies targets for future drugs and vaccines, an approach critically important in reducing the significant burden of TB disease worldwide.

► **Maertzdorf J**, Reipsilber D, Parida SK, *et al*. Human gene expression profiles of susceptibility and resistance in tuberculosis. *Genes Immun* 2011;**12**:15–22.

Natalie Settle

Correspondence to Natalie Settle, Department of Accident and Emergency, Watford General Hospital, Vicarage Road, Watford WD18 0HB, UK; nataliesettle@doctors.org.uk

Published Online First 30 March 2011

Thorax 2011;**66**:855. doi:10.1136/thoraxjnl-2011-200112