BCG VACCINATION AND TB IN CHILDREN

Authors’ reply to Turner and colleagues

I Abubakar professor of infectious disease epidemiology1, S Sridhar research associate2, M Eisenhut consultant paediatrician3, A Roy senior scientist4, R J Harris statistician1, L C Rodrigues professor of epidemiology5, P Mangtani senior lecturer5, I Adetifa paediatrician and medical epidemiologist6, A Lalvani professor of infectious disease2

1Centre for Infectious Disease Epidemiology and MRC Clinical Trials Unit, University College London, London, UK; 2Tuberculosis Research Centre, Respiratory Infections Section, National Heart and Lung Institute, Imperial College London, London, UK; 3Luton and Dunstable University Hospital, NHS Foundation Trust, Luton, UK; 4Centre for Infectious Disease Surveillance and Control, Public Health England, London, UK; 5London School of Hygiene and Tropical Medicine, London, UK; 6Medical Research Council, Fajara, Gambia

Turner and colleagues do not accept our conclusion that BCG prevents Mycobacterium tuberculosis infection without a valid mechanism and propose an alternative hypothesis for an apparent effect.1 2 We presented the consistent epidemiological finding of a protective effect of BCG against tuberculosis infection rather than speculating on a mechanism for this effect, which was not one of the stated objectives of our meta-analysis. Absence of a valid mechanism is not usually a basis for rejecting conclusions from consistently observed findings.3 Indeed, the protective effect of BCG against tuberculosis is not in doubt, even though a mechanism (and a correlate) of protection remain elusive after decades of investigation.4 Nonetheless, we believe that new vaccines for tuberculosis will be found only if we undertake more research to disentangle the mechanism of action of BCG vaccines, including their effects on innate and adaptive immune responses.5

Turner and colleagues’ explanation, based on the fact that antigens used in the interferon γ release assay (IGRA) are absent from BCG, is undermined by the protective effect of BCG against tuberculosis infection when the tuberculin skin test (TST) is used instead of IGRA as a marker of infection.6 7 Purified protein derivative comprises hundreds of M tuberculosis antigens shared by BCG, so that TST results in these studies could not be subject to “original antigenic sin.” The observation in our review of BCG and active tuberculosis that people sensitised to tuberculin are less protected further argues for the vaccine’s role in protecting against infection.8 9

Competing interests: None declared.

Full response at: www.bmj.com/content/349/bmj.g4643/rr/763154.


Cite this as: BMJ 2014;349:g5441

© BMJ Publishing Group Ltd 2014

i.abubakar@ucl.ac.uk