Asthma. At the time of this study ZU was funded by an MRC CASE PhD studentship, held in association with Novartis Institute for Biomedical Research. VS is the recipient of an MRC Industrial Collaborative PhD studentship held in association with Novartis, Horsham, UK. AG is the recipient of a British Medical Association James Trust Fellowship. CH acknowledges financial and technical support from the Department of Health via the NIHR comprehensive Biomedical Research Centre award to Guy's & St Thomas' NHS Foundation Trust in partnership with King's College London.

Competing interests None to declare.

Ethics approval Guys Hospital Ethics Committee, Royal Brompton and Harefield NHS Trust Ethics Committee.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- Wright GJ, Jones M, Puklavec MJ, et al. The unusual distribution of the neuronal/ lymphoid cell surface CD200 (OX2) glycoprotein is conserved in humans. Immunology 2001:102:173—9
- Gorczynski RM. CD200 and its receptors as targets for immunoregulation. Curr Opin Investig Drugs 2005;6:483—8.
- Clark DA, Gorczynski RM, Blajchman MA. Transfusion-related immunomodulation due to peripheral blood dendritic cells expressing the CD200 tolerance signaling molecule and alloantigen. *Transfusion* 2008;48:814—21.
- Zhang S, Cherwinski H, Sedgwick JD, et al. Molecular mechanisms of CD200 inhibition of mast cell activation. J Immunol 2004;173:6786—93.
- Hoek RM, Ruuls SR, Murphy CA, et al. Down-regulation of the macrophage lineage through interaction with OX2 (CD200). Science 2000;290:1768—71.
- Cherwinski HM, Murphy CA, Joyce BL, et al. The CD200 receptor is a novel and potent regulator of murine and human mast cell function. J Immunol 2005;174:1348—56.
- Shiratori I, Yamaguchi M, Suzukawa M, et al. Down-regulation of basophil function by human CD200 and human herpesvirus-8 CD200. J Immunol 2005;175:4441—9.
- Dimeloe S, Nanzer A, Ryanna K, et al. Regulatory T cells, inflammation and the allergic response—the role of glucocorticoids and vitamin D. J steroid Biochem Mol Biol 2010;120:86—95.
- Jeffery LE, Burke F, Mura M, et al. 1,25-Dihydroxyvitamin D3 and IL-2 combine to inhibit T cell production of inflammatory cytokines and promote development of regulatory T cells expressing CTLA-4 and FoxP3. J Immunol 2009;183:5458—67.
- Black PN, Scragg R. Relationship between serum 25-hydroxyvitamin d and pulmonary function in the Third National Health and Nutrition Examination Survey. Chest 2005;128:3792—8.
- Brehm JM, Celedon JC, Soto-Quiros ME, et al. Serum vitamin D levels and markers of severity of childhood asthma in Costa Rica. Am J Respir Crit Care Med 2009:179:765—71
- Jiang-Shieh YF, Chien HF, Chang CY, et al. Distribution and expression of CD200 in the rat respiratory system under normal and endotoxin-induced pathological conditions. J Anat 2010;216:407—16.
- Snelgrove RJ, Goulding J, Didierlaurent AM, et al. A critical function for CD200 in lung immune homeostasis and the severity of influenza infection. Nat Immunol 2008;9:1074—83.

- Payne D, McKenzie SA, Stacey S, et al. Safety and ethics of bronchoscopy and endobronchial biopsy in difficult asthma. Arch Dis Child 2001;84:423—6.
- Urry Z, Xystrakis E, Richards DF, et al. Ligation of TLR9 induced on human IL-10-secreting Tregs by 1alpha,25-dihydroxyvitamin D3 abrogates regulatory function. J Clin Invest 2009;119:387—98.
- Rijkers ES, de Ruiter T, Baridi A, et al. The inhibitory CD200R is differentially expressed on human and mouse T and B lymphocytes. Mol Immunol 2008;45:1126—35.
- Wright GJ, Cherwinski H, Foster-Cuevas M, et al. Characterization of the CD200 receptor family in mice and humans and their interactions with CD200. J Immunol 2003:171:3034—46.
- Koning N, van Eijk M, Pouwels W, et al. Expression of the inhibitory CD200 receptor is associated with alternative macrophage activation. J Innate Immun 2010;2:195—200.
- Costabel U, Bross KJ, Andreesen R, et al. HLA-DR antigens on human macrophages from bronchoalyeolar layage fluid. Thorax 1986:41:261—5.
- Hansdottir S, Monick MM, Hinde SL, et al. Respiratory epithelial cells convert inactive vitamin D to its active form: potential effects on host defense. J Immunol 2008;181:7090—9.
- Sigmundsdottir H, Pan J, Debes GF, et al. DCs metabolize sunlight-induced vitamin D3 to 'program' T cell attraction to the epidermal chemokine CCL27. Nat Immunol 2007: 8:285—93
- Fritsche J, Mondal K, Ehrnsperger A, et al. Regulation of 25-hydroxyvitamin D3-1 alpha-hydroxylase and production of 1 alpha,25-dihydroxyvitamin D3 by human dendritic cells. Blood 2003;102:3314—16.
- Lemire JM, Archer DC, Beck L, et al. Immunosuppressive actions of 1,25dihydroxyvitamin D3: preferential inhibition of Th1 functions. J Nutr 1995;125 (6 Suppl):1704S—8S.
- Reichel H, Koeffler HP, Tobler A, et al. 1 alpha,25-Dihydroxyvitamin D3 inhibits gamma-interferon synthesis by normal human peripheral blood lymphocytes. Proc Natl Acad Sci U S A 1987;84:3385—9.
- von Essen MR, Kongsbak M, Schjerling P, et al. Vitamin D controls T cell antigen receptor signaling and activation of human T cells. Nat Immunol 2010;11:344—9.
- Fallarino F, Asselin-Paturel C, Vacca C, et al. Murine plasmacytoid dendritic cells initiate the immunosuppressive pathway of tryptophan catabolism in response to CD200 receptor engagement. J Immunol 2004;173:3748—54.
- Dong Kim K, Zhao J, Auh S, et al. Adaptive immune cells temper initial innate responses. Nat Med 2007;13:1248–52.
- Holt PG, Strickland DH. The CD200—CD200R axis in local control of lung inflammation. Nat Immunol 2008;9:1011—13.
- Fuchs A, Atkinson JP, Fremeaux-Bacchi V, et al. CD46-induced human Treg enhance B-cell responses. Eur J Immunol 2009;39:3097—109.
- Aoki T, Matsumoto Y, Hirata K, et al. Expression profiling of genes related to asthma exacerbations. Clin Exp Allergy 2009;39:213—21.
- Koning N, Uitdehaag BM, Huitinga I, et al. Restoring immune suppression in the multiple sclerosis brain. Prog Neurobiol 2009;89:359—68.
- Zhang HL, Wu J. Role of vitamin D in immune responses and autoimmune diseases, with emphasis on its role in multiple sclerosis. *Neurosci Bull* 2010;26:445–54.
- Wang XJ, Ye M, Zhang YH, et al. CD200—CD200R regulation of microglia activation in the pathogenesis of Parkinson's disease. J Neuroimmune Pharmacol 2007;2:259—64.
- Evatt ML, DeLong MR, Kumari M, et al. High prevalence of hypovitaminosis D status in patients with early Parkinson disease. Arch Neurol 2011;68:314—19.

Correction

Young C, Owens C. 'To CT or not to CT? That is the question': outcome surrogates for surveillance in childhood cystic fibrosis. *Thorax* 2012;**67**:471–2

The following sentence should read:

However lung clearance index (LCI) being more effective than spirometry has been found to be as sensitive as HRCT in detecting early lung abnormalities, in a group of school age (8 year old) children, and together they compliment each other in providing markers for early CF lung diseases in children.³

Thorax 2012:67:581. doi:10.1136/thoraxjnl-2011-201549corr1

Thorax July 2012 Vol 67 No 7 581