

Correction

Coexistent Wegener's Granulomatosis and Goodpasture's Disease: What Is the Mechanism?

Shin JI, Park SJ, Kim JH. Coexistent Wegener's granulomatosis and Goodpasture's disease: What is the mechanism? *J Rheumatol* 2011;38:1521. In the July 2011 issue, a reply was not published for the Letter to the Editor titled "Coexistent Wegener's Granulomatosis and Goodpasture's Disease: What Is the Mechanism?"; the letter and reply are given in full below. We regret the error.

Coexistent Wegener's Granulomatosis and Goodpasture's Disease: What Is the Mechanism?

To the Editor:

We read with interest the article by Mulpuru, *et al*¹. They described a 50-year-old woman who developed Goodpasture's disease one month after the diagnosis of Wegener's granulomatosis¹. As one of the possible mechanisms, they described that antineutrophil cytoplasmic antibody (ANCA) might initiate renal damage, which exposes the glomerular basement membrane (GBM) as an antigenic source, allowing the development of anti-GBM disease^{1,2}. Although not extensively studied to date, there have been some reports that Th17 cell-associated cytokines might be involved in anti-GBM disease or Wegener's granulomatosis^{3,4}. Nogueira, *et al* recently reported that a subset of CD4-positive T cells characterized by interleukin 17 (IL-17) production (Th17 cells) might be implicated in the pathogenesis of ANCA-associated vasculitis (AAV) including Wegener's granulomatosis³. In their study, levels of serum IL-17A and IL-23 (critically required for maintenance of the IL-17-secreting phenotype⁵) were significantly elevated in patients with acute AAV compared to healthy controls, and high IL-23 levels correlated with higher levels of clinical disease activity and with higher ANCA titers³.

It was demonstrated that IL-23 might be closely associated with auto-reactivity to the Goodpasture antigen [noncollagenous domain of alpha-3 type IV collagen, alpha3(IV)NC1] in a form of experimental glomerulonephritis⁴. In that study, wild-type mice developed autoreactivity to alpha3(IV)NC1, such as humoral and cellular responses, renal histologic abnormalities, leukocyte accumulation, autoantibody deposition, and IL-17A mRNA expression (a cytokine produced by the IL-23-maintained Th17 subset)⁴. However, IL-23-deficient strains exhibited lower autoantibody titers, reduced cellular reactivity, diminished cytokine production [interferon- (Th1), IL-17A (Th17), and tumor necrosis factor-], and less renal disease and glomerular IgG deposition⁴.

There is a possibility that Th17 cell-associated cytokines, especially IL-23, might be involved in the common pathogenesis of both Goodpasture syndrome and Wegener's granulomatosis. Further studies should be performed to elucidate whether IL-23 might be related to the development of 2 diseases at the same time.

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REFERENCES

1. Mulpuru S, Touchie C, Karpinski J, Humphrey-Murto S. Coexistent Wegener's granulomatosis and Goodpasture's disease. *J Rheumatol* 2010;37:1786-7.
2. Bosch X, Mirapeix E, Font J, Borrellas X, Rodriguez R, Lopez-Soto A, et al. Prognostic implication of anti-neutrophil cytoplasmic autoantibodies with myeloperoxidase specificity in anti-glomerular basement membrane disease. *Clin Nephrol* 1991;36:107-13.
3. Nogueira E, Hamour S, Sawant D, Henderson S, Mansfield N, Chavele KM, et al. Serum IL-17 and IL-23 levels and autoantigen-specific Th17 cells are elevated in patients with ANCA-associated vasculitis. *Nephrol Dial Transplant* 2010;25:2209-17.
4. Ooi JD, Phoon RK, Holdsworth SR, Kitching AR. IL-23, not IL-12, directs autoimmunity to the Goodpasture antigen. *J Am Soc Nephrol* 2009;20:980-9.
5. Stritesky GL, Yeh N, Kaplan MH. IL-23 promotes maintenance but not commitment to the Th17 lineage. *J Immunol* 2008;181:5948-55.

doi:10.3899/jrheum.101213

Dr. Humphrey-Murto and Dr. Mulpuru reply

To the Editor:

We thank Dr. Shin and colleagues for their informative and thoughtful comments¹ regarding the potential role of interleukin 17 (IL-17) and IL-23 in the pathophysiology of ANCA-associated vasculitis (AAV), as well as Goodpasture's syndrome. The unprecedented advancement of biological therapies is providing new potential treatments for autoimmune diseases. Some new therapies have been disappointing, such as the use of etanercept in Wegener's granulomatosis², while others such as rituximab have demonstrated efficacy equivalent to standard therapies³. Ustekinumab, a fully human immunoglobulin (Ig)G1 antibody, binds to the p40 subunit of IL-12 and IL-23 and has recently been approved in Europe and the United States for the treatment of moderate to severe plaque psoriasis. As our understanding of disease mechanisms improves, directed therapy using new molecules may provide important novel therapies.

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REFERENCES

1. Shin JI, Park SJ, Kim JH. Coexistent Wegener's granulomatosis and Goodpasture's disease: What is the mechanism? [letter]. *J Rheumatol* 2011;38:1521.
2. Wegener's Granulomatosis Etanercept Trial (WGET) Research Group. Etanercept plus standard therapy for Wegener's granulomatosis. *N Engl J Med* 2005;352:351-61.
3. Stone JH, Merkel PA, Spiera R, Seo P, Langford CA, Hoffman GS, et al. Rituximab versus cyclophosphamide for ANCA-associated vasculitis. *N Engl J Med* 2010;363:221-32.

doi:10.3899/jrheum.101213.C1