


**VASCULITIS SYNDROMES**

# New ANCA assays put through their paces

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The role of indirect immunofluorescence (IIF), the assay method currently recommended in consensus guidelines for detection of antineutrophil cytoplasmic antibodies (ANCA), is being challenged by the results of a new multicentre study suggesting that the diagnostic performance of IIF has been overtaken by that of newer antigen-specific immunoassays. “Our results indicate that the current international consensus on ANCA testing for ANCA-associated vasculitis needs to be updated,” states Xavier Bossuyt, corresponding author of the study, published in *Annals of the Rheumatic Diseases*.

The standard IIF method used to screen for ANCA, a vital step in the diagnosis of ANCA-associated vasculitis, is based on an ethanol-fixed mixture of granulocytes and lymphocytes; positive results are confirmed by ELISA specific for proteinase 3 (PR3) or myeloperoxidase (MPO). “Due to technical innovations in ANCA diagnostic techniques, in particular PR3-ANCA and MPO-ANCA detection, it is questionable if screening by IIF is still the most optimal approach,” explains Bossuyt, speaking of the comparative study. “In order to have a broad picture, we evaluated eight widely used assays for PR3-ANCA and MPO-ANCA detection. All samples were also evaluated by IIF in two expert laboratories.” One laboratory used standard IIF, whereas the other used an IIF method based on a mixture of ethanol-fixed and formalin-fixed neutrophils, with ANCA testing conducted in human epithelial type 2 cells. The latter method is known to have improved specificity for MPO-ANCA versus

standard IIF, but the researchers were surprised to find it also had improved sensitivity, contributing to wide variation in IIF results from different laboratories.

The diagnostic performance of the eight tested antigen-specific immunoassays was comparable to or better than that of IIF in this cohort of 251 patients with newly diagnosed ANCA-associated vasculitis. “We also included samples obtained from consecutive disease controls (to reflect daily practice) and cohorts of relevant disease controls (in total 924 controls),” comments Bossuyt. Similar proportions of patients with ANCA-associated vasculitis were ANCA-negative: 11–17% by IIF, and 9–16% by antigen-specific immunoassay. Renal or other organ biopsies are needed to confirm the diagnosis of ANCA-associated vasculitis in these patients, the researchers’ report states.

The high reliability and reproducibility of results from the eight antigen-specific immunoassays tested by the research team led them to conclude that screening for ANCA by IIF is not necessary if a high-quality immunoassay is used. “We are working on a revision of the international consensus on screening for ANCA in the diagnostic work-up of ANCA-associated vasculitis,” says Bossuyt, who continues, “prospective studies are also being planned to validate these results.”

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**ORIGINAL ARTICLE** Damoiseaux, J. et al. Detection of antineutrophil cytoplasmic antibodies (ANCA): a multicentre European Vasculitis Study Group (EUVAS) evaluation of the value of indirect immunofluorescence (IIF) versus antigen-specific immunoassays. *Ann. Rheum. Dis.* <http://dx.doi.org/10.1136/annrheumdis-2016-209507> (2016)

