Letter

AIT test has no problem in the detection of anti-ribosomal P – authors' response

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See related letter by Jearn and Kim, http://arthritis-research.com/content/11/3/407,
and related research by Mahler *et al*., http://arthritis-research.com/content/10/6/R131

In a recent article, Jearn and Kim assessed the ability of indirect immunofluorescence on a novel human macrophage cell line (IT-1) in an autoimmune target (AIT) assay to predict the presence of anti-ribosomal P (anti-Rib-P) antibodies [1], based on a previously described cytoplasmic and/or nucleolar staining pattern [2]. Despite the clearance of the AIT test by the South Korea Food and Drug Administration, to the best of our knowledge this test is not widely used as a screening method – neither is it approved by the Food and Drug Administration (FDA) USA or is it a Communauté Européenne (CE) certified method for the detection of anti-nuclear antibodies. By contrast, many laboratories rely on HEp-2 cell substrates that are widely available as FDA and CE approved diagnostic kits from a variety of manufacturers.

In their study, Jearn and Kim identified sera with anti-Rib-P reactivity based on a double immunodiffusion (ID) assay, and then used these sera to determine the positivity and staining patterns in the AIT test. This method raises concerns because it is generally known that immunodiffusion is a relatively insensitive technique for the detection of human autoantibodies when compared with other techniques such as ELISA and western immunoblotting (WB).

In an example relevant to the anti-Rib-P system, Bonfa and colleagues clearly demonstrated that immunodiffusion has very low sensitivity for the detection of anti-Rib-P antibodies [3]. In their study, only 14% of anti-Rib-P-positive samples identified by WB were detected by immunodiffusion. Another study showed that ID exhibits significantly lower sensitivity compared with a multiplex system: 63/130 (48.5%) samples with at least one positive extractable nuclear antibody result were negative by ID, and all 11 sera with anti-Rib-P reactivity did not show a typical cytoplasmic staining pattern by indirect immunofluorescence [4]. While the aforementioned studies used HEp-2 cells as the substrate, there would be no reason to believe that the AIT assay would perform remarkably better.

In the context of contemporary diagnostic assays such as WB, ELISA or multiplexed addressable laser bead immuno-assays, therefore, the data presented by Jearn and Kim do not support the claim that the AIT test represents a sensitive and reliable method for the detection of anti-Rib-P antibodies. A systematic study is mandatory to compare the sensitivity and specificity of the AIT test for the detection of anti-Rib-P antibodies and other antibody specificities using a variety of contemporary diagnostic platforms, not just ID. In addition to anti-Rib-P, such a study could also include the evaluation of anti-Jo-1, anti-SS-A (Ro60) and anti-Ro52 antibodies, which have been shown to produce false negative results in indirect immunofluorescence on HEp-2 cells [2,5].

Competing interests

MM is employed at Dr Fooke Laboratorien GmbH selling autoantibody ELISAs. MJF receives honoraria from ImmunoConcepts Inc. (Sacramento, CA, USA) for consulting services.

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AIT = autoimmune target; anti-Rib-P = anti-ribosomal P; ELISA = enzyme-linked immunosorbent assay; ID = immunodiffusion; WB = western immunoblotting.

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