whether any variables predict clinical response to rituximab therapy.

Complete depletion of $CD20^+$ B cells was seen in the peripheral blood of 96% of patients, in the synovium of 88%, and the bone marrow of 100%. $CD19^+$ and $CD79a^+$ B cells persisted in the bone marrow of 68% of patients and in the synovium of all patients after rituximab treatment, but clinical response did not differ between patients with and without depletion of these B-cell subtypes. Autoantibody production (namely rheumatoid factor and anticitrullinated protein antibodies [ACPAs]) was significantly reduced. The risk of a moderate or no response to rituximab was significantly lower in patients with a negative ACPA IgM status and low expression of $CD79a^+$ in synovium.

Teng *et al.* suggest that the relation between ACPA IgM concentration and B-cell expression in the synovium can be explained by the differentiation of B cells in chronically inflamed synovium. They hypothesize that patients with high levels of B cells will benefit from retreatment with rituximab.

Original article Teng YKO *et al.* (2007) Immunohistochemical analysis as a means to predict responsiveness to rituximab treatment. *Arthritis Rheum* **56:** 3909–3918

BILAG-2004 is a valid measure of SLE disease activity

In a multicenter, cross-sectional study, Yee *et al.* have determined the construct and criterion validity of the British Isles Lupus Assessment Group 2004 index (BILAG-2004), a revision of the Classic BILAG index for disease activity in systemic lupus erythematosus (SLE). BILAG-2004 measures disease activity (scored from A to E) in nine systems: constitutional, mucocutaneous, neuropsychiatric, musculoskeletal, cardiorespiratory, gastrointestinal, ophthalmic, renal and hematologic. The index produces an overview of disease activity rather than a global score; where necessary, the highest score obtained on any of the systems assessed is taken as the overall score.

The study included 369 patients with SLE, from whom a total of 1,510 disease activity assessments were obtained. Increasing overall BILAG-2004 scores were associated with increasing erythrocyte sedimentation rate, decreasing C3 and C4 levels, increasing anti-double-stranded DNA antibody levels, and increasing SLE Disease Activity Index 2000 scores, demonstrating construct validity. Increase in therapy was more frequent for patients with higher BILAG-2004 scores, and scores indicating active disease (overall score of A or B) were significantly associated with increase in therapy, demonstrating criterion validity. Sensitivity, specificity, and positive and negative predictive values of BILAG-2004 were comparable to those of the classic BILAG index.

The authors conclude that the BILAG-2004 index is a valid measure of SLE disease activity, and recommend its adoption for clinical trials and outcome studies in SLE.

Original article Yee CS *et al.* (2007) British Isles lupus assessment group 2004 index is valid for assessment of disease activity in systemic lupus erythematosus. *Arthritis Rheum* **56:** 4113–4119

Silencing of pathogenic B cells offers a potential therapy for SLE

Systemic lupus erythematosus (SLE) is an autoimmune disorder associated with the presence of self-specific antibodies against double-stranded DNA. Current treatments for SLE involve immunosuppressive drugs, which have a range of severe adverse effects. Tchorbanov *et al.* describe a novel therapy to specifically target the disease-causing B cells.

The receptor FcγRIIb is an important negative regulator of B-cell function, which acts by binding the Fc fragment of IgG antibodies and signaling through the antigen-specific B-cell receptor. The authors designed a chimeric antibody—with a DNA-mimicking peptide linked to an antibody specific for FcγRIIb—to selectively suppress only the B cells producing pathogenic autoantibodies.

The chimeric antibody was then tested in MRL/lpr mice, which spontaneously develop lupus, to determine any therapeutic benefit. Treatment after the onset of disease delayed disease progression, as evidenced by decreased levels of serum autoantibodies and a reduction in the overall number of DNA-specific B cells measured by ELISPOT analysis, and treated animals did not develop lupus symptoms. The effects were observed