To investigate different parameters in SF of patients with systemic lupus erythematoses (SLE), rheumatoid arthritis (RA) and osteoarthritis (OA).

Methods We describe the evaluation of SF in 28 SLE, 41 RA, and 36 OA patients. SF is collected via arthrocentesis in heparinized or EDTA tubes. The diagnosis was established in all subjects prior to SF examination based on typical clinical and laboratory features. The clinical activity of the diseases at the time of joint aspiration varied.

Results The white blood cell (WBC) count in 28 SLE patients, ranging from 500 to 12,250 with an average count of 3473 cells/μl with 55% polymorphic nuclear cells (PMNs), was significantly lower than in RA - 11,048 cells/μl with 75% PMNs. The WBC count in OA patients was significantly lower - 3718±2373 cells/μl. The highest protein levels were found in RA patients, followed by SLE and OA patients: total protein respectively 50.3±6.9 vs 45.7±3 vs 48.6±10.9 g/L and IgG concentration - 21.22±3.53 vs 9.53±4.27 vs 18±2.48 g/L. Circulating Immune Complexes were significantly higher in the RA group compared to SLE group and OA: 0.247±0.07 vs 0.193±0.05 vs 0.108±0.40 mg/ml.

Conclusions The analysis of the SF of lupus patients has shown elevated levels of WBCs, total protein and circulating immune complexes as a markers for the high SLE activity. Synovial fluid is a possibility to define the type of arthritis in different rheumatic diseases.

Background and aims An ANA and ENA testing algorithm was established at the immunology laboratory at Waitemata District Health Board (WDHB) in New Zealand. WDHB serves more than 500,000 people in central New Zealand. Due to the high demand for ANA testing, WDHB opted for an automated ANA EIA screening and Extractable Nuclear Antibodies (ENA) EIA reflex testing algorithm, with HEp-2 IFA as an option when there is a strong indication of false negative results.

Methods From January 2012 to April 2016, 8515 patient samples were tested with ANA Screening EIA kits, and 1624 samples were reflex tested with ENA EIA kits for detection of antibodies to SSA, SSB, Sm, Sm/RNP, Scl-70, Jo-1, dsDNA and centromere (Bio-Rad Laboratories, California, USA). The reflex testing is triggered when either the screening result was positive or requested by a clinician. ANA IFA tests were performed on request.

Results The general ANA screening positive rate was 18.5% (1585/8515) in the WDHB population. The positivity rate for each individual ENA is shown in Table 1. The overall positive rate for ENA testing was 54.8% (890/1624) indicating that the ANA screening has been effective in detecting the specific presence of ENAs.

Conclusions Using this ANA and ENA testing algorithm, WDHB was able to screen a large number of patient samples and quickly identify specific ENA all in one day, resulting in improved workflow and significant labour and cost savings.