

Poster presentation

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## The addition of granulocyte macrophage colony stimulating factor (GM-CSF) to juvenile systemic lupus erythematosus serum can reduce abnormal neutrophil apoptosis

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### Background

Juvenile-onset Systemic Lupus Erythematosus (JSLE) differs from adult-onset SLE yet few studies explore its immunopathology. We have previously demonstrated that serum from JSLE patients induces increased apoptosis in neutrophils from both healthy controls and JSLE patients, when compared to control serum. Quantification of cytokines that inhibit apoptosis were found to be decreased in JSLE serum compared to control serum. Here we aim to investigate whether the addition of these cytokines could abrogate the increased neutrophil apoptosis associated with incubation in JSLE serum.

### Materials and methods

Children (diagnosed < 17 years) with JSLE and non-inflammatory conditions (control) were included in this study. Following written informed consent, heparinised whole blood and serum was collected. Neutrophils were isolated from healthy controls and incubated alone or with 10% JSLE or control serum. Neutrophils were also incubated with JSLE serum with the addition of either 20 pg/ml GM-CSF, 40 pg/ml TNF-alpha or 20 pg/ml IL-6. Apoptosis (mean  $\pm$  SEM) was measured by flow cytometry after two hours.

### Results

Neutrophils incubated with JSLE serum plus TNF-alpha (15.3  $\pm$  3.26%) or JSLE serum plus IL-6 (14.5  $\pm$  3.9%) had similar apoptosis to those neutrophils incubated with

JSLE serum alone (14.2  $\pm$  3.21%). However those cells incubated with JSLE serum plus GM-CSF (7.5  $\pm$  1.36%) had decreased apoptosis compared to JSLE serum alone.

### Conclusion

Apoptosis of neutrophils induced by incubation with JSLE serum can be reduced with the addition of GM-CSF.