

Poster presentation

## Effective use of rituximab in combination with low dose cyclophosphamide in childhood onset systemic lupus erythematosus (SLE) with relapsing class IV nephritis

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from 15<sup>th</sup> Paediatric Rheumatology European Society (PreS) Congress  
London, UK. 14–17 September 2008

Published: 15 September 2008

*Pediatric Rheumatology* 2008, **6**(Suppl 1):P237 doi:10.1186/1546-0096-6-S1-P237

This abstract is available from: <http://www.ped-rheum.com/content/6/S1/P237>

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### Objectives

We evaluated effectiveness of rituximab, an anti-CD20 monoclonal antibody, in combination with low dose cyclophosphamide and intravenous (IV) methylprednisolone in three pediatric SLE patients with relapsing class IV nephritis.

### Methods

#### Patients 1 and 2

Identical twin females with SLE, complicated by biopsy proven class IV nephritis at age 6-years and treated with NIH cyclophosphamide protocol (NIHCP), had biopsy documented Class IV renal flare at age 10-years; unresponsive to mycophenolate mofetil (MMF) and corticosteroids.

#### Patient 3

A 12-year old female with SLE, complicated by biopsy documented Class IV nephritis and treated with NIHCP, had 2 further renal flares, which responded to a cumulative dose of 36 grams of cyclophosphamide. At age 16, she had another biopsy documented class IV renal flare, despite maintenance with MMF.

All patients received pulse therapy with: IV cyclophosphamide 0.5 g/m<sup>2</sup> with IV methylprednisolone (IVMP) 250 mg on days 1 and 23; IV rituximab 375 mg/m<sup>2</sup> on days 2, 9, 16 and 23.

### Results

All 3 patients had a dramatic improvement in urine protein-creatinine ratios, and normalization of blood pressure. Despite low-dose daily corticosteroids, all patients had an increase in generalized SLE activity by 4 weeks following rituximab therapy, which responded to re-introduction of MMF. No side effects apart from expected decrease in B-cell counts were noted.

### Conclusion

Rituximab in combination with low dose cyclophosphamide and IVMP was effective in controlling recurrent class IV nephritis in 3 pediatric SLE patients.

Re-introduction of mycophenolate mofetil was required within 4 weeks following rituximab therapy to maintain disease remission.