

# Efficacy of Rituximab in severe Lupus Nephritis in children: a case series.

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## INTRODUCTION

The association of cyclophosphamide or Mycophenolate Mofetil (MMF) with prednisolone is the treatment of reference of severe lupus nephritis, both in adults and children but is associated with major side effects. Rituximab failed to demonstrate an improvement of patient outcome when associate with MMF and prednisolone. However, recent data suggest that it might enable us to spare prednisolone. We report our experience of the **use of Rituximab in first lupus nephritis flair in children.**

## RESULTS

Table 1: Patients characteristics at baseline

Patient number	Age	Gender	LN classification	Pu/creat (mg/mmol)	Serum albumine (g/L)	Creat (µmol/L)	eGFR (mL/min/1.73m2)
P 1	13,5	M	III + V	0,08	24,6	43	133,6
P 2	12,4	F	V	0,24	24,7	68	78,4
P 3	13,7	F	III + V	1,15	29,1	49	116,2
P 4	12,0	F	IV	0,05	31,1	75	78,4
P 5	17,4	M	IV + V	0,12	27,5	79	73
P 6	15,1	F	IV	0,25	24,2	99	61,6
P 7	10,8	F	IV	1,07	26,1	66	73,6
P 8	12,6	F	IV	0,66	14	104	54
Median, IQ	13,0 [12;14]			0,25 [0,11;0,76]	26 [25-28]	72 [62;84]	76 [70;88]

- Median CD20 depletion time 10.0 [6.8-10.5] months
- Prednisolone rapidly tapered (median dose was 0.33 [0.19-0.55], 0.10 [0.08-0.14], 0.03 [0.0-0.08] mg/kg at 3, 6 and 12 month respectively)

Table 2: Patients status by time

	M3	M6	M12	
P 1	RC	RC	RC	LTF: Lost to follow-up P8: follow-up < 6months
P 2	RP	RC	RC	
P 3		RP	RP	
P 4	RC	RC	RC	
P 5	RP	RP	LTF	
P 6	RP	RC	RC	
P 7		RC	RC	
P 8	RP			
Total	2RC, 4RP, 2 no remission	4RC, 2RP	5RC, 1RP	

- 2 severe infections (pneumonia and bacteraemia)
- pancreatitis secondary to sulfametoxazol-trimethoprine treatment

## METHODS

### Inclusion criteria:

- Patients < 18 years old
- First lupus nephritis flair stage III to V on kidney biopsy
- From 2006 to 2015

### Treatment regimen:

- Methylprednisolone pulse (500mg/m2) followed by Rituximab (1000mg/1.73m2) at day 1 and 15.
- MMF at a dose of 1200mg/m2/day
- Oral steroids tapered down and withdrawal left to each physician appreciation

### Judgement criteria:

- Complete remission (CR): (Pu/creat) <50mg/mmol and normal serum creatinine
- Partial remission (PR): Pu/creat<300mg/mmol and no raise of creatininemia over 15% of baseline.

## Conclusion

A treatment combining RTX, MMF with a rapid decrease of prednisolone seems efficient in severe lupus nephritis. The ability of RTX to allow complete steroid avoidance is currently investigated in adults. Such protocol may be of major interest in children, since steroids are known to have major side effects in this population.

Further studies are needed to assess the safety and the efficacy of this treatment and to evaluate the amount of steroids that can be spared through his strategy.

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