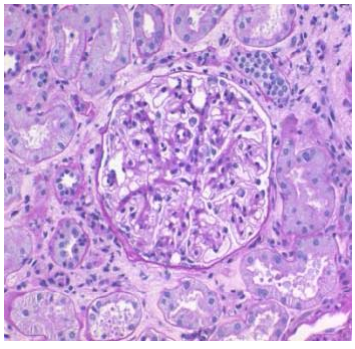
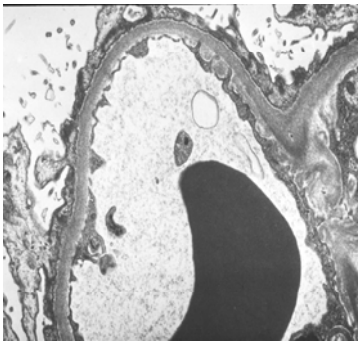
Treatment of Adult Minimal Change Disease and FSGS

Jai Radhakrishnan

Minimal Change Disease





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MCD: Initial Episode-1

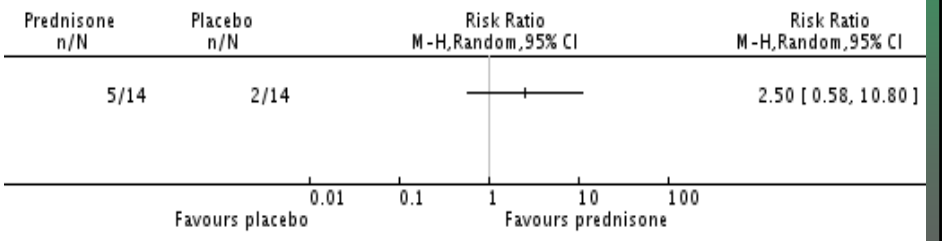
- **We recommend that corticosteroids be given for initial treatment of nephrotic syndrome.** (1C)

- We **suggest** 1mg/kg/day (maximum 80mg) or alternate day 2mg/kg (maximum 120mg) (2C)

Rationale: Adult MCD
Response to Steroids 125mg qod x 2 months

Minimal Change—Population

	n	Age	Initial Proteinuria	Disease Duration	Follow-up "Blind"	Follow-up Total
Prednisone	14	29 yr	9.8 g/d	2 mo	60 mo	69 mo
Control	14	32 yr	9.8 g/d	2 mo	50 mo	85 mo



Coggins CH.Trans Am Clin Climatol Assoc. 1986;97:18-26.

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Rationale: Adult MCD
Response to Steroids 125mg qod x 2 months

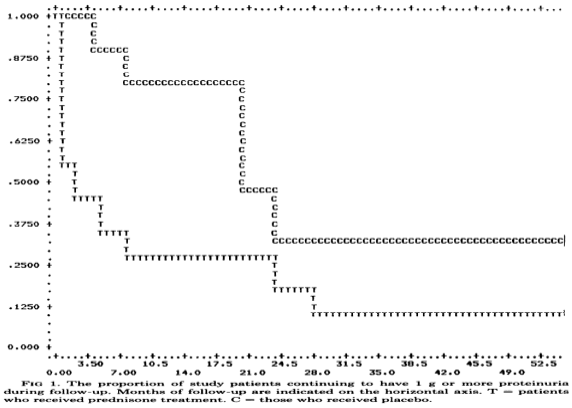


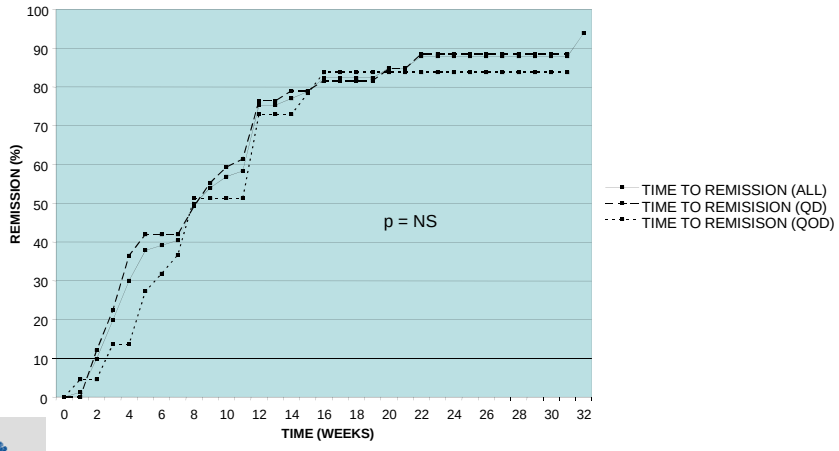
FIG 1. The proportion of study patients continuing to have 1 g or more proteinuria during follow-up. Months of follow-up are indicated on the horizontal axis. T = patients who received prednisone treatment. C = those who received placebo.

Coggins CH.Trans Am Clin Climatol Assoc. 1986;97:18-26.

MCD: Initial Episode-2

- We **suggest** maintaining high dose steroids
  - minimum 4 weeks if complete remission is achieved
  - maximum period of 16 weeks if complete remission is not achieved (2C).
- We **suggest**: slow taper of corticosteroids over at least 24 weeks after complete remission. (2D)

Rationale: Adult MCD
Time to Remission on Steroids: QOD vs. QD



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Waldman et al.Clin J Am Soc Nephrol. 2007 May;2(3):445-53

MCD: Initial Episode-3

- If relative contraindications/intolerance to high dose corticosteroids (e.g. uncontrolled diabetes, psychiatric conditions, severe osteoporosis), we **suggest** oral **cyclophosphamide** or **calcineurin inhibitors** as discussed in frequently relapsing MCD (2D).

- We **suggest** using repeat courses of corticosteroids for infrequent relapses, as in the first episode of MCD (2D).

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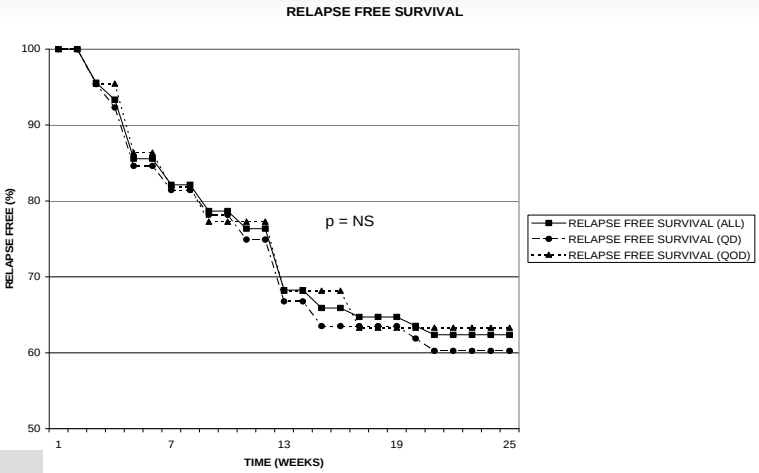
Rationale: Natural History of Adult MCD: Relapse Free Survival



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Waldman et al.Clin J Am Soc Nephrol. 2007 May;2(3):445-53

Frequent relapsing/corticosteroid-dependent (FR/SD) MCD

- We **suggest** oral **cyclophosphamide** 2.0-2.5 mg/kg/day for 8-12 weeks (2C)
- We **suggest** **CsA** 3 to 5 mg/kg/day or **Tac** 0.05 to 0.1 mg/kg/day with relapsed despite cyclophosphamide and for patients of childbearing age (2C)
- We **suggest** **MMF** 750-1000 mg twice daily for patients who are intolerant of corticosteroids, cyclophosphamide and CNI (2D).

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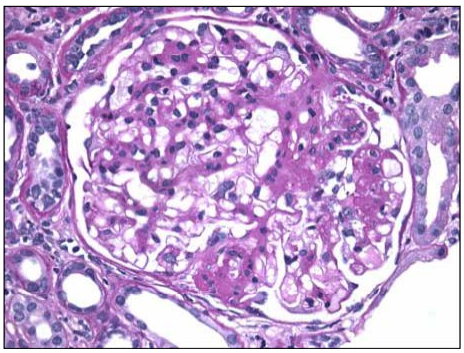
Corticosteroid-resistant MCD

- Re-evaluate patients who are corticosteroid-resistant for other causes of nephrotic syndrome. (Ungraded)
- Consider repeat renal biopsy, which most commonly shows FSGS pathology.

MCD with Acute Kidney Injury

- We **suggest** that MCD patients who have acute kidney injury (AKI) be treated with corticosteroids as for a first episode of MCD (2D).

Idiopathic FSGS



Patient Selection

- We **recommend** that corticosteroid and immunosuppressive therapy be considered only in FSGS pts
  - Idiopathic
  - Nephrotic (1C)

FSGS: Initial Treatment-1

- We **suggest** prednisone or prednisolone daily single dose of 1 mg/kg (maximum 80 mg) or alternative day 2 mg/kg (maximum 120 mg) (2C)

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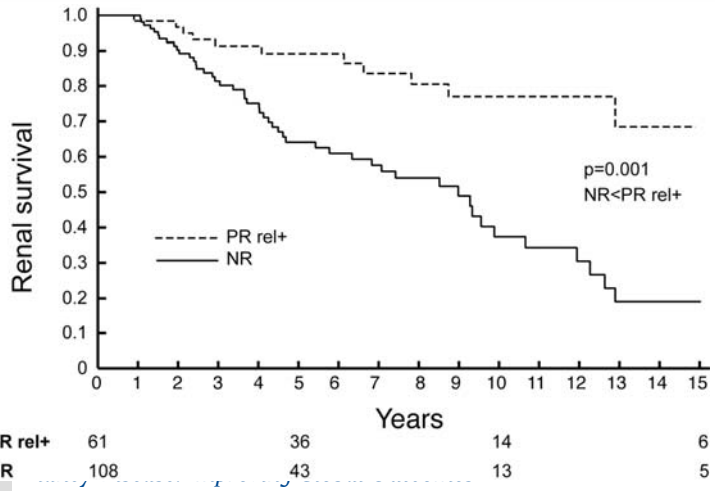
Rationale: Remission and Renal Failure in FSGS

No Remission vs. PR with a relapse



Troyanov S.. J Am Soc Nephrol. 2005 Apr;16(4):1061-8.

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FSGS: Initial Treatment-2

- We **suggest** high dose of corticosteroids be given for:
  - minimum of 4 weeks
  - maximum of 16 weeks, as tolerated, or until complete remission has been achieved, (whichever is earlier) (2D).
- We **suggest** corticosteroids be tapered slowly over a period of 3-6 months after achieving complete remission. (2D)

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Initial (Low Dose) Steroids in Adult FSGS

Low Dose	Dose (mg/kg/day)	High dose Duration (Months)	Total Duration (Months)
Lim	0.5-1.5		2
Beaufils	1.0-1.5	1	3
Velosa	0.5-1.0	1	2

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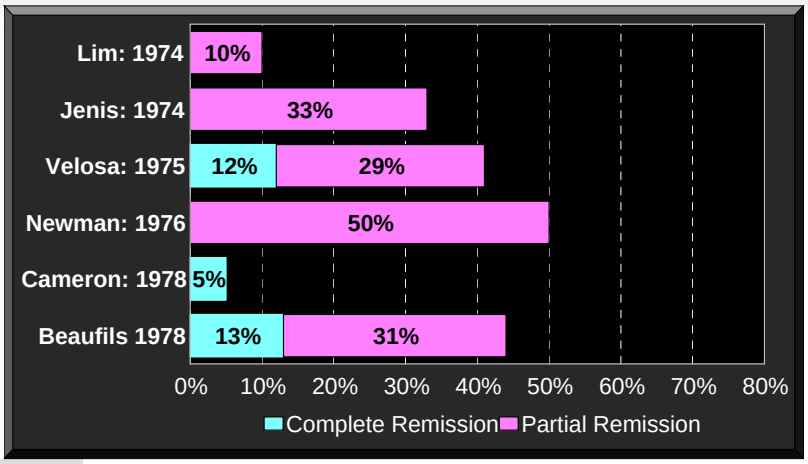
Response to Low Dose Steroids in Adult FSGS



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Initial (High Dose) Steroid in Adult FSGS

High Dose	Dose (mg/kg/day)	High dose Duration (Months)	Total Duration (Months)
Agarwal	1	2-3	6
Pei/Cattran	0.3-2.0		5-6
Ponticelli	0.5-1.0	2	6-9
Schwartz/Korbet	0.5-1.0	2-3	6

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* Treatment beyond 6 months was not beneficial

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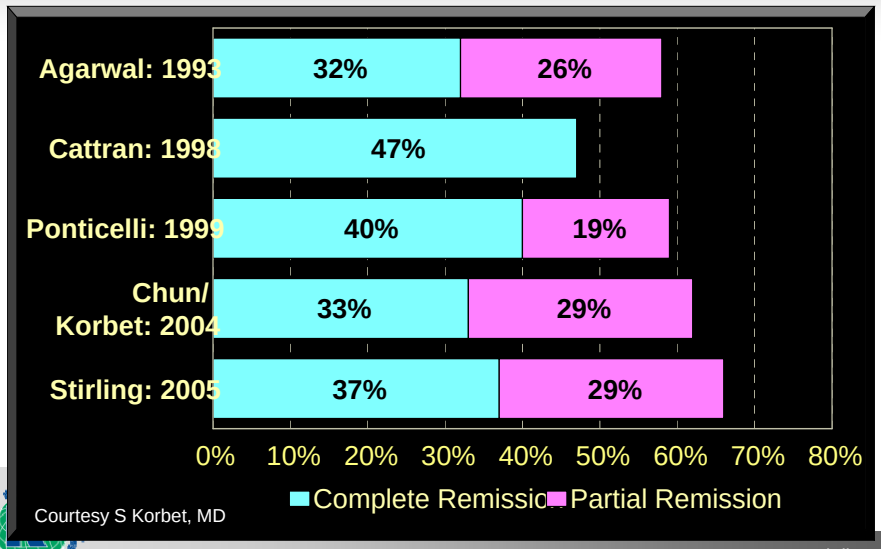
Response to High Steroids in Adult FSGS



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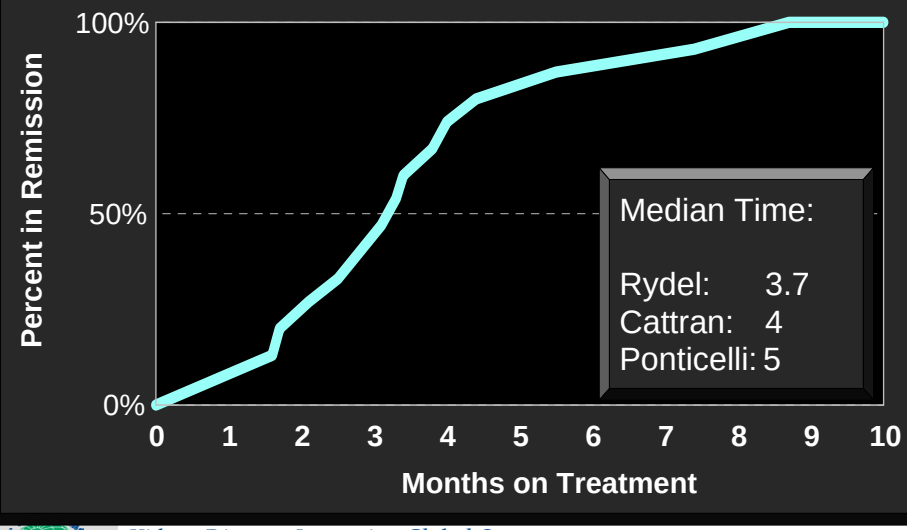
Time to Remission in FSGS



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Rydel et al, AJKD 1995

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FSGS: Initial Treatment-3

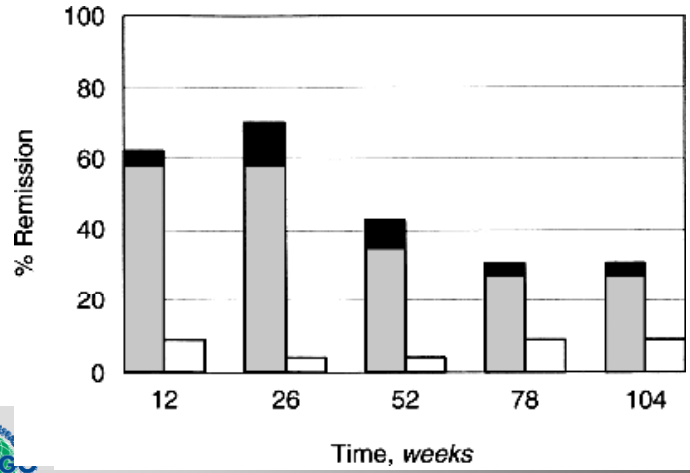
- We **suggest** calcineurin inhibitors (CNI) as first-line therapy for patients with relative contraindications or intolerance to high dose corticosteroids (e.g. uncontrolled diabetes, psychiatric conditions, severe osteoporosis), (2D)

Treatment for Steroid-resistant FSGS

- We **suggest** CsA at 3-5 mg/kg/day in divided doses should be given for at least 4-6 months (2B)
- If partial or complete remission, we **suggest** continuing CsA treatment for at least 12 months, followed by a slow taper (2D).

Rationale: Cyclosporine treatment of Steroid-resistant FSGS

Cyclosporine (North American Collaborative Trial)



Cattran DC, Appel GB.. Kidney Int. 1999 Dec;56(6):2220-6.

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Breaking Clinical Trials
FSGS-CT

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Thank you

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