MODIFIED - 'MODIFIED PONTICELLI REGIMEN' - FOR IDIOPATHIC MEMBRANOUS NEPHROPATHY

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Introduction

- Idiopathic membranous nephropathy (IMN) is a common cause of nephrotic syndrome in adults.
- Most favorable results have been obtained with cytotoxic agents given together with glucocorticoids (Ponticelli regimens).[1, 2] However there is no universal consensus regarding its therapy
- The concern in these regimens is their potential adverse effects

Objective

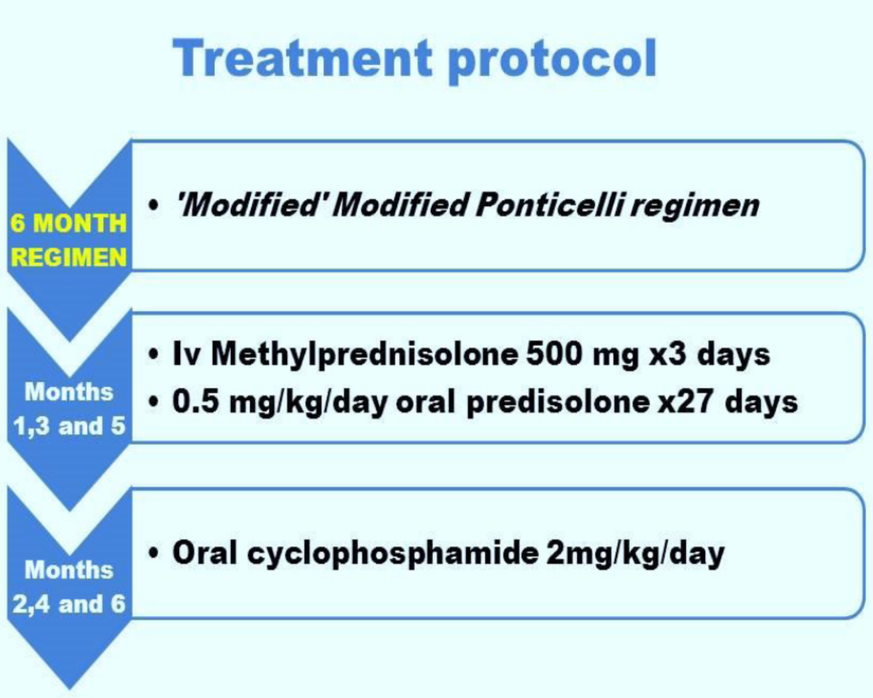
- To assess the effect of low dose pulse methyl prednisolone alternating with oral cyclophosphamide as a six month regimen in IMN

Methodology

Study Design: Retrospective
Study duration: five year duration(2010-2014)

Inclusion criteria:
Adults (>18 years) who had biopsy proven IMN and were treated with a drug protocol (Figure 1) which was a modification of 'the modified Ponticelli regimen'

Figure 1



Exclusion criteria:
Patients who were treated conservatively or with other therapy (cyclosporine)
Study population: 27 patients
Data Collection & Outcomes:

- Baseline clinical, biochemical and histopathological characteristics were collected from case records
- Clinical outcomes (Remission, Partial remission , No remission, and adverse effects of therapy at the end of 6 month
- Follow-up data for one year were studied for relapse

Data Analysis: Data was analyzed using SPSS version15

References

1.Ponticelli C, Altieri P, Scolari F et al. A randomized study comparing methylprednisolone plus chlorambucil versus methylprednisolone plus cyclophosphamide in idiopathic membranous nephropathy. *J Am Soc Nephrol* 9: 444–450, 1998
2. Jha V, Ganguli A, Saha TK, et al. A randomized, controlled trial of steroids and cyclophosphamide in adults with nephrotic syndrome caused by idiopathic membranous nephropathy. J Am Soc Nephrol. 2007;18(6):1899-1904

Results

Table 1. Baseline characteristics of study population	
Characteristic	(n =27) (%)
Age#(years)	44.8±12.96
males	17(60.7%)
Diabetes Mellitus	4(14.3%)
Hypertension	20(71.4%)
Chronic Kidney Disease Stage 0 Stage 1 Stage 2 Stage 3	13(48.1%) 1(3.7%) 8(29.6%) 4(14.8%)
Micro hematuria	4(14.8%)
Serum creatinine at presentation(mg/dl)*	0.9(0.7-1.3)
eGFR at presentation(ml/min)*	96.9(79.8-113.2)
Hemoglobin(g/dl)#	12±2.3
Albumin(g/dl)#	2.1±0.5
Cholesterol(mg/dl)	346±80.3
Proteinuria(g/day)*	6.6(4.2-9.4)
Range of proteinuria(g/day) -4-8 >8	19(71.4%) 8(28.6%)
Data represented in *median (Inter-quartile range), # mean ± SD	

- All patients received either angiotensin converting enzyme inhibitors/ angiotensin receptor blockers as supportive therapy.
- The mean serum creatinine was 0.9 mg/dl and the median proteinuria was 6.6 gram per day.
- At the end of six months 25.9% had complete remission, 62.9% had partial remission and 11.1% had no response to therapy (table 2).
- The most common complications seen during the therapy were infections (35.7%) and steroid induced diabetes mellitus (37.5%). Leucopenia was seen with 8.3% of patients.
- On univariate analysis, the response to therapy was independent of either duration of the disease or degree of proteinuria
- The relapse rate during follow-up was 36.3% and the median time to relapse was six months.
- The limitations of our study are retrospective nature, lack of controls and short duration of follow-up

Table 2. Outcomes at end of 6 month therapy and on follow-up.	
Outcome	All (n =27) (%)
Complete remission	7(25.9%)
Partial remission	17(62.96%)
No remission	3(11.1%)
Time of remission(months) #	5.92±1.24
Creatinine at 6 months(mg/dl) *	0.9(0.7-1.1)
Proteinuria at 6 months(g/day) *	700(230-2.25)
eGFR at 6 months(ml/min/1.73 m2) *	99.3(82.6-110.4)
Relapse on follow-up(one year)	8(36.3%)
Time to relapse(Months) *	6(2.75-8.25)
Data represented in * median (Inter-quartile range) , # mean ± SD	

Conclusion

- **Use of low dose steroids and cyclophosphamide is effective in achieving remission in idiopathic membranous nephropathy.**
- **Further large randomized control trials with long term follow-up are needed to confirm the same**

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