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Biopsy proven Membranous Nephropathy: Patient characteristics and outcomes from 2005 to 2017. A single center experience.

Dr Bamidele Ajayi[1], Dr Raja Rashid[1], Dr Rafeea Shah[1], Dr Azmul Hussain[1]
[1]*Birmingham Heartlands Hospital, UHB NHS trust, Birmingham, United Kingdom*

Introduction:
Membranous nephropathy (MN) is the commonest form of Glomerulonephritis causing nephrotic syndrome. There is heterogeneity in its presentation and remitting relapsing course warrants treatment strategies based on risk stratification. Phospholipase A2 receptor antibodies (PLA2RAb) have emerged as an alternative to biopsy in selected patients and Rituximab has been added to the treatment armamentarium recently. In these times of changing paradigms in managing MN, it is essential to know the salient characteristics and therapy responses in population catered for.

Methods:
Retrospective review was conducted on all native kidney biopsies performed in our center from 2005 till 2017. 89 patients with biopsy proven primary MN were identified. Relevant clinical details were extracted from the electronic records.

Results:
Mean age of the study population was 56 years (17 to 89 years) and 63% were males. 56 (63%) patients were hypertensive.

66% of the patients had normal renal function tests (RFTs) at presentation. In terms of proteinuria, 12.4 % presented with subnephrotic, 30 % with nephrotic (3.5 to 8 grams/ day) and 47 % had more than 8 grams of proteinuria at presentation. Mean serum albumin was 24 g/L +/-8 (9g/l to 48g/l). For most patients; PLA2RAb titers were unavailable, 17% patients were PLA2rAb positive while 30 % tested negative.
Regarding therapy, 90% of the patient were treated with ACEI and quarter of the patients received anticoagulation.
42% of the patients did not receive any immunosuppression. Prednisolone alone or combined with Calcineurin inhibitors (CNI) or Mycophenolate (MMF) was offered to 16% of the patients. CNI based therapies alone or with steroids were used in 20 percent of the patients. Ponticelli regimen was used in 14 % cases. Rituximab was used in two patients.
Regarding outcomes, 35% of the patients experienced complete remission, 40 % had partial remission and 17% failed to remit. Out of the patients that failed to remit, 50 % were in the high range nephrotic group. Complete remission in 13 out of 31 patients and partial remission in 19 out of 35 patients was achieved with supportive therapy. 18 patients attained complete and 16 patient achieved partial remission with Immunosuppression. 50% of the patients had normal RFTs towards the length of follow up. Of the 10 patients that progressed to ESRD, 8 patients had deranged RFTs at the time of biopsy.
Complications included venous thromboembolism (VTE) in 6 patients, including renal vein thrombosis in 3 patients and Pulmonary embolism in 1 patient. All of these patients had albumin below 25 g/l. Cyclophosphamide intolerability and Tacrolimus related side effects were reported in one case each.

Conclusion:
Despite having a heterogeneous population, our findings are similar as described in literature. Substantial proportion of patients achieved complete or partial remission without any need for Immunosuppressive medications. When needed, Immunosuppression was relatively well tolerated and effective in inducing

remission. Proportion of patients with elevated RFTs and high degree of proteinuria had the worst prognosis. As expected, VTE is not an uncommon complication with MN and anticoagulation should be instituted in hypoalbumenemic patients.