

## **Novel Approaches in the Treatment of Hansen’s Disease: A Case Series Using Monthly Triple-Drug Therapy of RMM in the United States**

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**Background:** The World Health Organization (WHO) recommends multidrug therapy (MDT) for the treatment of paucibacillary and multibacillary forms of leprosy, also known as Hansen’s disease (HD). MDT combinations of dapsone, rifampin, and clofazimine have reduced the prevalence of the disease but are not without adverse effects impacting regimen adherence. These previous MDT combinations also require daily medications, leading to a high pill burden which decreases quality of life and challenges adherence to the regimen. Hence, an urgent need exists to consider alternative MDT regimens with an improved safety profile that promotes treatment adherence.

**Methods:** A case series of 10 patients with HD (nine patients with multibacillary leprosy and one with pure neural leprosy) treated with monthly rifampin, moxifloxacin, and minocycline (RMM). The United States National Hansen’s Disease Program (NHDP) diagnosed and treated patients across US institutions. All patients received a regimen of 12–24 months of RMM. We reviewed the clinical outcomes, adherence, rate of completion, and adverse events of patients treated with monthly RMM from January 2019 to August 2022. Nine patients had multibacillary leprosy, with some having type- 2 reactions. One patient had pure neural leprosy with a reversal reaction.

**Results:** In this case series, we identified that all patients completed the RMM regimen without treatment interruptions. None of the patients experienced any skin hyperpigmentation or any significant side effects. All patients tolerated the monthly RMM regimen with rapid improvement of skin lesions and without logistic hurdles.

**Conclusions:** Based on previous clinical evidence and the results of this case series, the NHDP and other programs should consider the RMM regimen as first-line therapy.