

# Novel Approaches in the Treatment of Hansen's Disease: A Case Series Using Monthly Triple-Drug Therapy RMM in the U.S.

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## Background

- The WHO recommends multidrug therapy (MDT) for the treatment of paucibacillary and multibacillary forms of leprosy.
- MDT combinations of dapsone, rifampin, and clofazimine have reduced the prevalence of the disease but are not without adverse effects impacting regimen adherence (Fig.1).
- Previous MDT combinations 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.



Figure 1. Clinical images of patients with Hansen's disease who developed clofazimine-induced pigmentation.

## Methods

- A case series of 10 patients with HD treated with monthly rifampin, moxifloxacin, and minocycline (RMM) from January 2019 to August 2022 while reviewing clinical outcomes, adherence, rate of completion, and adverse events of patients.
- Nine patients had multibacillary leprosy and one patient had pure neural leprosy with a reversal reaction.

## Results

- All 10 patients completed the RMM regimen without treatment interruptions.
- None of the patients experienced any skin hyperpigmentation or any other significant side effects.
- All patients tolerated the monthly RMM regimen with rapid improvement of skin lesions (Fig.2), decreased side effects, and improved QoL (Table 1).



Figure 2. (Above) 20-year-old male with multibacillary HD (nodular lepromatous) and (Left) 70-year-old male with multibacillary HD (borderline lepromatous leprosy) treated with a 24-month course of RMM demonstrating clinical improvement of skin nodules and plaques with no adverse events or skin lesion hyperpigmentation.

Table 1. Comparison of the traditional first-line therapy versus monthly therapy.

	Daily standard WHO-recommended multidrug therapy	Monthly-therapy using RMM
Clinical outcomes	Proven clinical efficacy	Rapid clinical response likely driven by low frequency of side effects of multidrug therapy
Side effect profile	High frequency of side effects including cosmetic	Minimal
Quality of life	High burden of pills Frequent side effects Some improvement in overall markers of QOL	Patients are happy because of rapid clinical response with low burden of pills and minimal side effect profile
Adherence to medications and completion of therapy	Reduced adherence to multidrug therapy	Low pill burden and safety profile improve adherence

QOL, quality of life; RMM, rifampin, moxifloxacin, and minocyclin; WHO, World Health Organization.

## 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 as it improves adherence and quality of life while decreasing side effects (Table 1).

## References

- Franco-Paredes C, Garcia-Creighton E, Henao-Martínez A, et al. Novel approaches in the treatment of Hansen's disease (Leprosy): a case series of multidrug therapy of monthly rifampin, moxifloxacin, and minocycline (RMM) in the United States. *Ther Adv Infect Dis.* 2022. doi:10.1177/20499361221135885.

