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Original Article

Experience with Administering Single Dose Rifampicin as Post-Exposure Prophylaxis (SDR-PEP) for Leprosy Through Blanket Approach in Uttar Pradesh, India

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Globally, the blanket approach of administering single dose rifampicin as post exposure prophylaxis (SDR-PEP) for leprosy is to be studied thoroughly. This is the first report from India on the blanket approach carried out in a village of Uttar Pradesh. A self-driven district leprosy officer witnessing high number of new leprosy cases from a village of Varanasi in 2017, screened the entire population of the village (33 houses, population 172), found 12 new cases, treated them with MDT, and administered SDR-PEP to the entire eligible population. Since then, this population has been closely followed. The last follow-up was done in 2023. No new case of leprosy was found during these six years of follow-up. Though anecdotal in nature, the report signifies the need to conduct systemic studies on the blanket approach for SDR-PEP, documenting its effectiveness in locations of varied endemicity and mobility.

Keywords: Leprosy, SDR-PEP, Single Dose Rifampicin, Post-exposure Prophylaxis, India, Banket Approach

Introduction

Following the evidence of the effectiveness of single dose rifampicin as post exposure prophylaxis (SDR-PEP) for leprosy provided by the COLEP study in Bangladesh in 2008, NLR India in collaboration with the national government took part in the leprosy post exposure prophylaxis (LPEP) programme that was carried out in eight countries (Moet al 2008, Tiwari et al 2017, Richardus et al 2021). Encouraged by the study results, India rolled out SDR-PEP as national intervention on October 2, 2018. In India, a total of 394,276 contacts received SDR-PEP in 2021-2022 (April-March) (NLEP 2021-2022).

Materials and Methods

The district leprosy officer (DLO) of Varanasi, Uttar Pradesh in his OPD of Pandit Deen Dayal Hospital detected two multi-bacillary (MB) leprosy patients from a small village called Kamauli in Chirayegaon block of Varanasi district in July 2017. He, with his team visited the village on July 24, 2017. The village with 33 houses had a population of 172, all were examined. They found 12 new cases of leprosy, four MB and eight paucibacillary (PB), aged 15-58 years, three females and nine males. Two of the MB cases were earlier treated as PB. None had a disability. All were immediately put on the multi-drug therapy (MDT). On the following day, SDR-PEP was administered to the entire village with their consent after informing them about the national policy on SDR-PEP and all related information about the use and risks of taking single dose of

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rifampicin, covering all the healthy residents above 2 years of age, a total of 156 persons. No side effects of administration of SDR-PEP were observed.

The entire population has been closely followed (every six months) since July 25, 2017. The last follow-up was done in 2023, between August 25 to September 8, 2023 (2 weeks) all the village residents were examined. No new leprosy case was found in the village.

Discussion

No research has been done on administration of SDR-PEP using the blanket approach in India. The initiative of the Varanasi DLO was self-driven with the intention of addressing the occurrence of a very high number of new leprosy cases in this small population. Along with MDT he administered SDR-PEP to entire healthy population of the village, that was proven to be effective with negligible risk of inducing resistance in *Mycobacterium tuberculosis* (Mieras et al 2016). There are few examples of blanket use of SDR-PEP (Bakker et al 2005, Richardus et al 2021). A study in five islands of Indonesia compared blanket approach with the standard contact screening approach using two doses of rifampicin 3.5 months apart, the results afer three years follow-up demonstrated the cumulative incidence on the blanket islands was significantly lower than on the control islands (p=0.03) (Bakker et al 2005). Another study reported on the administration of SDR-PEP in one remote island in Indonesia, but there is no published report on the follow-up (Tiwari et al 2018). The Varanasi experience is from a village which is not isolated from surrounding population and has good community mobility. Our experience shows that this blanket approach of using mass chemoprophylaxis with SDR-PEP is a promising strategy to interrupt transmission. A comparison of the different approaches of PEP along with an evidence-informed SDR-PEP support tool has also been published (Ter Ellen et al 2022). A scientific comparison of the blanket approach and its (cost-) effectiveness in locations of varied endemicity and community mobility will help in better understanding of the approach. India aims to accelerate interruption of transmission by 2027 (NSP 2023-2027). This blanket approach deserves due consideration as per the evidence available as one of the strategies to hasten the stoppage of transmission.

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