

## Management of Leprosy in the Context of COVID-19 Pandemic: Recommendations by SIG Leprosy (IADVL Academy)

### Background

Rising numbers of COVID-19 cases in India: The world is facing an unprecedented pandemic of coronavirus (SARS-CoV-2)/COVID-19 with rising numbers being detected in India. The Indian Association of Dermatologists Venereologists and Leprologists (IADVL) Special Interest Group (SIG) on leprosy, with guidance from *IADVL academy of Dermatology*, has come out with recommendations on the management of leprosy patients in the current context.

- **General risk factors for Covid-19 relevant to India:** People of all ages can be infected by the new coronavirus (COVID-19). The risk of becoming severely ill with COVID-19 appears to increase in individuals aged >60 years and in those with pre-existing morbidities like cardiovascular disease (e.g., hypertension, persons who have had, or are at risk of heart disease or stroke), chronic respiratory disease (e.g., chronic obstructive pulmonary disease), diabetes, cancer, smoking, and immunosuppression. Certain laboratory alterations such as neutrophilia and elevated levels of lactate dehydrogenase (LDH) are also associated with a greater risk for the development of severe forms of COVID-19<sup>[1-3]</sup>

**Possibility of leprosy-Covid-19 co-infection:** More than 200,000 leprosy cases per year have been recorded globally<sup>[4]</sup> since 2008 with India contributing around 60% of these cases every year. Studies published so far on COVID-19 from other parts of the world, including one with >1000 cases, have not yet detected leprosy patients co-infected with COVID-19,<sup>[5]</sup> nonetheless we should be alert to the possibility of such an occurrence in India.

**Challenges specific to leprosy patients:** It is too early to understand the dynamics of such a co-infection. However, this document discusses in brief the potential challenges faced in such a situation.

- **Patients on corticosteroids for treatment of leprosy reactions and nerve function impairment:** Prednisolone is immunosuppressive in a dosage  $\geq 10$  mg per day or a total cumulative dose  $\geq 700$ mg. Consequently, considering that most patients in leprosy reactions require long periods of treatment with varying doses of prednisolone, they should be considered immunosuppressed and, therefore, more vulnerable to any infection.<sup>[6]</sup> The current interim guidance from world health organization (WHO) on clinical management of severe acute respiratory infection when COVID-19 infection is suspected advises against the use of corticosteroids, unless indicated for another reason<sup>[3]</sup>

- **Patients with other laboratory alterations:** Patients with mid-borderline, borderline-lepromatous or lepromatous leprosy may have high levels of *LDH and can develop neutrophilia* during type 2 leprosy reaction (erythema nodosum leprosum), and hence theoretically are at a *higher risk* for severe COVID-19 infection<sup>[7]</sup>
- **Limited availability of multidrug therapy (MDT) and Clofazimine:** Shut downs and social distancing advocated in the country are likely to constrain and limit the access to MDT and other key leprosy services. There is already a nation-wide shortage of clofazimine in India for over last 6 months
- **Poverty and overcrowding:** Majority of people suffering from leprosy belong to the lower socioeconomic group and are at a high risk due to overcrowding and poor living conditions. The social distancing to prevent spread of COVID-19 infection is difficult to practise in such situations
- **Increasing stigma and discrimination:** As evident from the initial reports, COVID-19 patients put under quarantine are at risk of discrimination and social stigma.<sup>[8]</sup> Furthermore with centuries old discrimination and stigma towards leprosy, those patients with co-infection could be more vulnerable. They may also be apprehensive to come forward for evaluation or testing for the fear of getting quarantined and losing their income.

### Suggested Recommendations

1. IADVL and SIG leprosy will play a key role in advocacy on behalf of leprosy affected individuals and their families during the COVID-19 epidemic
2. Patients of leprosy registered for treatment should be advised to continue MDT and practice all suggested guidelines and precautions to prevent COVID-19 as applicable to general population and report immediately to the COVID-19 nodal point in case of symptoms of fever, cough and breathlessness. The use of telephone, social media, and Whats App are being used to communicate key messages to the patients. An alternative could be that ASHA workers or other healthcare workers in each region can send SMS in local languages to the patients regarding collection and continuation of the MDT. The Leprosy Mission Trust has started their tele-counselling services for leprosy patients in English, Hindi, Tamil, and Malayalam
3. Health units should consider the possibility of providing A-MDT (accompanied MDT) drugs for all registered leprosy patients<sup>[9]</sup> for 3/6 months, avoiding monthly return of stable patients

4. Ministry of health should be requested to inform state and district health centres to make provision for extra quantity of MDT blister packs and medicines to provide for three months of A-MDT for all registered patients, old and new
5. To maintain compliance and adherence to MDT by registered patients, health centres should be advised to dispense MDT blister packs and other treatments to all leprosy patients who approach them, even if they are registered with other centres or the private sector,<sup>[9]</sup> till such a time the travel restrictions are in place
6. Leprosy patients who develop acute signs and symptoms of lepra reaction/new nerve function impairment/neuritis during the course of regular treatment or any drug allergy or adverse effects should report immediately to the closest functioning leprosy treatment facility/general health centre for assessment and treatment. As an alternative the use of telemedicine consultation/using social media like Whats App/SMS should be explored and encouraged. Caution should be exercised on the use and dosage of corticosteroids, which are immunosuppressants
7. Please note that the leprosy patients who are **on corticosteroids are at higher risk** of developing complications from COVID-19.<sup>[6,10]</sup> In addition patients with factors/comorbidities such as age >60, diabetes mellites, ischemic heart disease, hypertension, and renal disease the risk is much higher. Hence all such patients should follow strict confinement to their homes and all other social distancing norms during this period of pandemic, more than normal population or other leprosy patients
8. In leprosy patients already on corticosteroids, their dose should be reduced as permissible in a given case to a minimum dose which controls the reaction, preferably to prednisolone 20 mg/day and tapered 5 mg every 2 weeks while evaluating the patient using telemedicine consultation/WhatsApp. However, patients on chronic glucocorticoid therapy (>3 months) are at increased risk of adrenal suppression or failure and in these cases steroid dose may be reduced more cautiously and we should keep in mind that few patients with chronic ENL generally require corticosteroids for a longer period hence the benefit from continuing steroids may outweigh the small increase in the risk of acquiring COVID-19.
9. The use of other immune suppressants like azathioprine, methotrexate, cyclosporine which produce severe immunosuppression should be avoided
10. Chloroquine is historically known to be useful in the management of type 2 lepra reactions.<sup>[11,12]</sup> Hydroxychloroquine has also been shown to play a role in the prevention and treatment of COVID-19 pneumonia.<sup>[13,14]</sup> We advocate the use of hydroxychloroquine in the management of type 2 lepra reactions as a steroid sparing agent as per recent Govt. of India/ICMR guidelines for management of COVID-19 infection.<sup>[15]</sup> A detailed history of heart disease for structural heart disease, previous history of ventricular arrhythmia or syncope, implanted heart rhythm devices and co-administration of other QT prolonging drugs should be taken along with baseline electrocardiography (ECG) to estimate the QTc interval should be done prior to starting treatment and the drug avoided in such patients<sup>[16]</sup>
11. Colchicine has been found to be beneficial in the treatment of mild and moderate ENL<sup>[12]</sup> through its ability to inhibit the release of proinflammatory cytokines and chemokines. Patients with severe COVID-19 were also noted to have higher serum levels of pro-inflammatory cytokines (TNF- $\alpha$ , IL-1, and IL-6) and chemokines (IL-8). Colchicine at present is under clinical trial as a potential drug to prevent severe COVID disease<sup>[17]</sup>
12. Similarly, Thalidomide is very effective in treating severe and recurrent ENL through its anti TNF $\alpha$  action and could potentially benefit patients of leprosy with COVID-19 co-infection. However, its availability for Hansen patients is generally a concern in the health centres in the country and health authorities should pay attention to this at present scenario. Thalidomide has anti-inflammatory, anti-fibrotic, anti-angiogenesis, and immune regulation effects, however in view of its teratogenic effect it should be used with caution. Patients on Thalidomide should be continued at the minimum dose permissible which controls the ENL
13. Minocycline due to its antimicrobial and anti-inflammatory action,<sup>[18,19]</sup> pentoxifylline, and NSAID's can also be considered as steroid sparing agents in the management of mild to moderate type 2 lepra reaction
14. In the present context of non-availability of clofazimine/nonavailability of MDT blister pack, the recommended alternative regimen for MB disease<sup>[20,21]</sup> is as follows: Rifampicin 600 mg + Dapsone 100 mg + Ofloxacin 400 mg (or Minocycline 100 mg) once a month; followed by Dapsone 100 mg + Ofloxacin 400 mg (or Minocycline 100 mg) daily till the time patient is in a position to contact original treatment facility registered for MDT treatment
15. Apart from the above, hand washing, personal hygiene, use of protective face masks and social distancing to prevent COVID-19, and taking care of nutrition, infections and infestation is important to maintain immunity
16. Elective re-constructive surgeries should be rescheduled to a later date. Acute surgical interventions like nerve abscess decompression to relieve nerve pain and restore nerve function can be scheduled as indicated and as per the availability of a functioning surgical facility
17. Enhanced emphasis should be placed on self-care techniques. Patients should be educated on active and

passive home-based physiotherapy and wound care and prevention of disability services including the use of splints and supports

18. Keeping in mind that a significant proportion of patients are from a lower socioeconomic stratum, we recommend the use of social media platforms to make them aware of the food security and socioeconomic measures initiated by the central and local Governments. They may also be utilized to provide psycho-social counselling for needy patients facing increased stigma, discrimination and depression from job loss or isolation due to social distancing/quarantine, including mobilizing community to support leprosy affected individuals and their families.

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