Innovative leprosy control project: LPEP

Although leprosy is often considered to be a disease of biblical times, it still affects many people. Thanks to the availability of free multidrug therapy (MDT), the number of leprosy patients has been drastically reduced over the past decades, a real public health success story. Nevertheless, new patients are still detected every year and given the decreasing awareness and funding, the ‘last mile’ in eliminating leprosy proves to be difficult.

To support efforts in ending leprosy, the Novartis Foundation for Sustainable Development and Netherlands Leprosy Relief are collaborating with national leprosy programs and other International Federation of Anti-Leprosy Association (ILEP) partners to interrupt transmission of leprosy. In pilot sites of several countries across Asia, Africa and Latin America, the collaboration aims at introducing leprosy post-exposure prophylaxis (PEP) for contact persons of newly diagnosed patients to decrease their risk of developing leprosy.

Fighting an ancient disease

Leprosy is an infectious disease caused by Mycobacterium leprae, bacteria that multiply very slowly. Once infected, the average incubation period is two to three years, although it can take between 6 months and 40 years for symptoms to appear. Leprosy is not highly infectious and although its transmission is not fully understood, close and frequent contact with an infectious patient accelerates transmission. Disabilities are secondary complications which result from late diagnosis when the insensitivity (nerve damage) caused by leprosy is already present. Multidrug therapy (MDT), the WHO-recommended treatment, consists of three drugs (dapsone, rifampicin and clofazimine), of which the latter two were developed in the research laboratories of Novartis. MDT has made it possible to treat patients, reduce the transmission of leprosy and prevent disabilities. Even patients with the severest form of the disease show visible clinical improvement within weeks of starting treatment.

It is since 2000 that Novartis –through WHO- has been providing free MDT to all leprosy patients in the world, donating more than 53 million blister packs valued at USD 85 million, helping to treat 6 million leprosy patients worldwide. In 2012, as part of its commitment to the London Declaration on Neglected Tropical Diseases (NTDs), Novartis announced the extension of this MDT donation throughout 2020.

Since 1981, more than 16 million leprosy patients have been treated thanks to the widespread availability of MDT, reducing the global burden by 95% - a real public health success story. In recent years, however, leprosy elimination efforts have become a victim of their own success: with fewer patients detected, funding and political commitment as well as knowledge of the disease has declined. The case detection rate for leprosy has plateaued at about 220,000–250,000 over the past eight years, and the disease remains endemic in many countries in Asia, Africa and Latin America; even countries with low overall endemicity
may have localized high-burden pockets. As a result, the remaining challenge now is to interrupt transmission of leprosy and reduce its incidence again.

A new strategy to interrupt transmission of leprosy
In 2013 the Novartis Foundation launched a new leprosy strategy that focuses on interrupting transmission, to support the last mile in the ultimate goal of leprosy elimination. This strategy is based on consensus reached by a group of leading leprosy and disease elimination experts, who agree that a successful program requires early diagnosis and prompt treatment for all patients, tracing (also known as active screening) and post-exposure prophylaxis (PEP) for contact persons of patients newly diagnosed with leprosy, development of new diagnostic tools, as well as strict epidemiological surveillance and response systems to monitor progress. The aim of this strategy is to demonstrate that the annual number of newly diagnosed leprosy patients can be further reduced.

To implement this strategy, the Novartis Foundation for Sustainable Development is collaborating with the Netherlands Leprosy Relief (NLR) and other ILEP members, the Erasmus University in the Netherlands and national leprosy control programs. This collaboration will implement an international project, the leprosy post-exposure prophylaxis project (LPEP), and introduce preventive treatment for leprosy in several pilot countries across Asia, Africa and Latin America with the purpose of reducing the risk for contact persons of newly diagnosed patients to develop leprosy.

Preventing the spread of leprosy
Although there are still uncertainties as to how leprosy is transmitted, one of the high risk factors is proximity with an infectious patient. Therefore, once a new patient has been diagnosed, health services actively screen the household members and neighbors of the patient, examine them and promptly refer symptomatic persons for MDT. Active contact tracing of newly diagnosed leprosy patients is a targeted strategy to diagnose those most at risk. As part of the LPEP project, asymptomatic contact persons will be offered a preventative therapy, which is a single dose of rifampicin, reducing the risk of developing leprosy by 50 to 60% in the following two years.

The overall aim of the LPEP project is to demonstrate that chemoprophylaxis for contact persons of newly diagnosed leprosy patients is feasible and efficient, so that it can become routine practice in all endemic countries. LPEP will also examine the effect of PEP on leprosy incidence in the target populations.

The LPEP project has four goals:
- Integration of lessons learned with LPEP into national leprosy programs
- Development of guidelines for contact management and preventive treatment of contact persons
- Creation of nationally scalable surveillance systems that include contact tracing and preventive treatment
- Documentation of the cost implication for national leprosy programs of this new strategy
For a world without leprosy
The LPEP project is part the Novartis Foundation’s focus on exploring innovative interventions to bring the world closer to the eventual goal of leprosy elimination. The Novartis Foundation also supports:

- Research with ENLIST and the London School of Hygiene and Tropical Medicine on the clinical features and impact of leprosy reactions, causing severe morbidity for leprosy patients.

- Research with the Leiden University on leprosy biomarkers and on the further development of tools to improve leprosy diagnosis, and

- A pilot project in Cambodia with the CIOMAL Foundation and the Cambodian national leprosy program, to determine the yield of early case detection when contact persons of formerly diagnosed (up to 10 years earlier) leprosy patients are screened.

The Novartis Foundation has been active in the fight against leprosy for over 25 years. Besides implementing the new strategy toward zero transmission of leprosy, the foundation also facilitates the Novartis MDT donation and convenes leprosy and disease elimination experts and stakeholders at key events, striving to bring new momentum in the last mile in leprosy elimination.

For more information:
www.novartisfoundation.org
www.youtube.com/novartisfoundation