Diabetes Program

Type 2 diabetes is a highly prevalent non-communicable disease in India and is estimated to affect more than 7% of its population. While the etiology of diabetes is complex, most would agree that there is a significant contribution from both genetic and environmental, including “lifestyle” factors. As is the case with most diseases that impact the rural poor, the nature of diabetes in rural India is qualitatively different compared to its manifestations among the urban middle class. Accumulated data from JSS suggests, that 45% of the people coming with diabetes to JSS are undernourished, 59% are under the age of fifty, and 22% are Adivasis.

In other words, even a disease like diabetes is irrevocably tied to socioeconomic conditions that shape the overall landscape of ill-health and marginalization. It is therefore apt to ask whether under-nutrition related diabetes is a separate illness by itself?

The story of Dukhni Bai

Dukhni Bai, a 36-year old mother of three, came to Jan Swasthya Sahyog in November 2009, having lost both her health and livelihood. Two months prior to her visit, she developed a constant backache and progressively lost weight, losing her capacity to work in the fields during the rice harvest. Her husband, Jai Hari was earning Rs. 50 a day as a landless laborer. Dukhni Bai’s symptoms put an end to her daily earnings of Rs. 40 and cut her family’s income in half. The loss of income meant that feeding three children and Jai Hari’s 80 year old mother became more difficult.

Dukhni Bai was diagnosed with diabetes and the cost of physician visits, lab tests and insulin kits was much more than the family could afford even if she had been working. Since Dukhni Bai had stopped working, her husband was forced to take advances from the farmer he was working for. The family of six had barely been able to make do on the subsidized rice they were eligible for because of their “below poverty line” (BPL) status. The rice usually ran out in two weeks and they would have to buy more on their own. The price of rice had shot up over three years, almost doubling to Rs. 35 per kilo from Rs. 19 in 2007. A kilo of dal would cost them Rs. 80, and as a result, they had cut it out of their diet entirely. Vegetables were eaten in minute quantities because they cost too much as well.

The World Health Organization has quoted studies that say that the treatment of diabetes in India could swallow a quarter of a family’s monthly income. In the case of Dukhni Bai’s family, it would have taken up nearly half of it. The management of a chronic condition would continue to push the family deeper into debt and when asked how he managed the family’s finances, after pondering on it, all Jai Hari could say was: “That’s a good question.”
**Leprosy Program**

Leprosy is an infection caused by *M. Leprae*, and affects approximately a half a million people, majority of whom reside in India. Infections can be asymptomatic for 5-10 years, making early diagnosis challenging, but can ultimately lead to severe and permanent disability. Despite having one of the largest leprosy eradication programs in the world, up to hundred thousand new cases are reported in India each year. Surprisingly, in today’s world, leprosy constitutes one of the least infectious diseases (compared to TB, HIV and Malaria), as most people are thought to possess some form of resistance or another. Thus, it comes as no surprise that leprosy has primarily become a disease of the poorest. In addition to disability and suffering, those infected are also subjected to discrimination, denial of basic rights and health care.

In working to combat diabetes and leprosy among the indigenous population of central India, JSS’s work is not only reducing the inequity in access to healthcare but generating precious grassroots knowledge, which is otherwise unavailable. While the standard medical literature attributes 90% of type 2 diabetes to obesity, JSS is seeing a strong correlation of diabetes and leprosy to poverty in the marginalized areas of central India.

In the past 5 years JSS has recorded 1350 diabetic patients and 700 leprosy patients. Both of these diseases can cause various levels of disability, reduce working capacity, and in the absence of appropriate intervention, lead to morbidity. In the first 5 months of 2016, 178 new patients enrolled with JSS.

**Update on the Diabetes program**

In most advanced medical establishments, the diagnosis of diabetes includes not just the measurement of blood glucose levels (which can be transient), but that of glycelated hemoglobin (HbA1C), which records the recent history of blood glucose levels in the individual (for the past few weeks/months). HbA1C measurement is now conducted at the JSS laboratory as a standard protocol for diagnosing Type 2 diabetes in patients who present with early symptoms of the disease.

In addition, JSS has added the following to its diagnosis and care protocols:

- Anthropometry measurements (to estimate genetic risk based on familiar history)
- Subsidized care for patients with diabetes
- Counseling
- Screening for complications
- Care for foot complications
- Eyecare
- Screening for complications of all those diagnosed through a standardized investigation protocol
- Care of complications as well as anti-hyperglycemic treatment with either injectable insulin or oral medicines. Past experience shows that 50% of people with diabetes require insulin early in the disease.

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Men constitute a slightly higher proportion of patients than women. 26.4% of these patients are from Madhya Pradesh.

Update on the Leprosy program

A large number of people with leprosy who come to JSS are cases of misdiagnosis, treatment failures or late-stage patients that have developed irreversible deformities. Over 50% of such patients have a lepromatous pole that has poor outcome. Those with presentations like skin lesions, lepra reaction, anesthesia, ulcers, and deformity are provided comprehensive care by JSS. Most patients are poor, and the program attempts to improve compliance and outcome of treatment by subsidizing the cost of comprehensive care. The program includes:

- Correct and complete diagnosis including lab care
- Appropriate treatment with steroid and other anti-inflammatory agents, and for the duration of 1 to 2 years depending on the type
- Appropriate care for lepra reactions
- Ulcer and anesthetic sites care, and other preventive care such as MCR rubber shoes and hand appliances
- Ensuring referral to appropriate specialized institutions in the region for those who need surgical intervention
Update on the Leprosy program Continued...

- Treatment subsidy for indigent patients on long-term treatment that includes medicine, laboratory tests and treatment of complications

Over last 6 months, JSS diagnosed and started on treatment 37 new patients, which included 12 (~33%) women.

Leprosy has 2 major classifications - Borderline and Lepromatous, the later being more debilitating type with higher risk of complications. Of all the patients diagnosed during this period - 16 were lepromatous type. and 2 patients have had ENL reaction, which is difficult to manage medically.

According to WHO classification - most (33 of 37) have had multi-bacillary disease grade with multiple lesions. About half of these patients (17) had some form of disability. The commonest being both limb muscle weakness, clawing, and hand and foot drop. A significant number of patients have had higher disability scores, which are difficult to treat. Functionality regaining is also difficult in cases with higher disability scores.
Update on the Leprosy program Continued...

About another half of the patients (36) had complete anesthesia on the lesions, which would lead higher risk of injuries and complications.

Smear Positivity: Over 50% of the patients were found to have *M Leprae* on their smear microscopy.