Letter from Ganiyari

AN INTRODUCTION

Ganiyari is a village in Chhattisgarh—nothing special, just another village in Central India. The health and social problems encountered in Ganiyari, like those in vast rural regions of India, include unchecked infections, widespread malnutrition, marginalization of certain groups, and poor public health systems.

Yet, Ganiyari, its problems, and the India it symbolizes, do not frequently affect the healthcare professional based in urban areas. By publishing a *Letter from Ganiyari* we hope to provide insights into healthcare issues of these areas to our readers through the experience of healthcare professionals who have lived and worked with the people of the region for over a decade.

The *Jan Swasthya Sahyog* (JSS, literally the People's Health Support Group) has been running a community health programme in the area for the past 15 years. It has focused on providing comprehensive healthcare to the people of the region, particularly tribals. Patients are drawn from a catchment area that spans seven districts and services are provided through a three-tiered structure consisting of a referral hospital in Ganiyari, outreach clinics in forest areas and village health workers. JSS also provides nursing education and has recently started a postgraduate programme in family medicine.

The primary objective of all activities of JSS has been to address inequity in health while running a busy programme. JSS has tried to understand the causes of poor health and offer solutions through training, writing and other forms of advocacy. Some themes that have repeatedly emerged in the course of their work include neglected diseases, cost reduction without compromising quality and rationality, hunger–illness interaction, appropriate technology, tribal health, strengthening the public sector, generalist medical education, etc. We hope these issues will be relevant to a large group of healthcare professionals. (Readers may learn more about JSS through their website: *www.jssbilaspur.org*.)

—Editors

TUBERCULOSIS AND UNDERNUTRITION: A TALE OF TWIN PROBLEMS

Not surprisingly, tuberculosis (TB), as a classical illness of poverty, is one disease that we diagnose and manage in large numbers in our programme. Over the past 15 years, we have seen more than 500 new patients with TB every year who pose enormous technical, operational and financial challenges. We struggle to find solutions to these problems everyday.

The most striking feature in these patients is the extent of coexisting malnutrition. In an observational study over 6 years, the median body mass index (BMI) and body weight of patients with TB were 16 kg/m^2 and 42.1 kg among men, and 15 kg/m^2 and 34.1 kg among women, respectively, indicating that 80% of women and 67% of men had moderate-to-severe undernutrition (BMI<17.0 kg/m^2).[1] Six years later in 2014, there are no signs of improvement. At present, 52% of patients (57% of men, 48% of women) are stunted indicating chronic undernutrition. Only 3% of these patients have co-infection with HIV and another 8% have diabetes mellitus. These levels of undernutrition adversely affect the severity of the disease, make treatment difficult, and result in poorer short- and long-term outcomes.

Recently, a popular talk show[2] on television in India focused on issues related to TB care. By discussing issues such as the quality of drug regimens, problems of accessing diagnostic facilities, regulation of treatment providers, and vulnerability of healthcare providers, the show seemed to have conveyed that the biggest challenge is drug resistance. That certainly seems to be the case in urban Mumbai where among newly diagnosed patients the proportion of multi-drug resistant (MDR) TB is as high as 30% and it is 67% among those who have been treated before.[3] Treatment regimens for MDR-TB are known to be difficult to administer, expensive, often toxic, and only half the patients get cured.

A day after this programme was telecast, we reviewed the profile of admitted patients in our 7-bed TB ward (Fig. 1). Five of them were tribals of which 3 belonged to a particularly vulnerable tribal group. They were 19–59 years of age, their body weight ranged from 24 to 41 kg and the BMIs were 10.3–15.1 kg/m^2. All but one was sputum-positive, and one had empyema. All were HIV-negative, while one of them had associated diabetes. The results from cultures of 3 patients showed that their bacteria were sensitive to isoniazid and rifampicin and we await results for the other 3. At Ganiyari, of the 717 positive sputum cultures of all consecutive 1151 patients with pulmonary TB over the past 42 months, 3% of isolates among new patients (n=535) showed MDR-TB while it was 16.1% among those on retreatment (n=186). These rates are much lower than those reported from Mumbai. Thus, drug resistance does not seem to be the most important issue among our patients in rural Chhattisgarh where coexisting undernutrition is an overwhelming concern.

BMI levels considered lethal,[4] i.e. <13 kg/m^2 among men and <11 kg/m^2 among women, were seen in 7% of patients. While these may represent an extreme end of starvation by selecting patients sick enough to require admission, half of our general patients, including those receiving outpatient treatment, had a BMI of <16 kg/m^2 at presentation. A BMI of <16 kg/m^2 makes for a precarious state for patients with TB. It not only doubles the risk of dying while on treatment, it results in much higher rates of side-effects, poorer absorption of drugs, and poorer quality of life at the end of treatment.

With these life-threatening levels of weight and BMI in Ganiyari, the question 'Should we provide supplemental food to all patients with TB and undernutrition to improve their outcomes?'—a topic of intense, and often acrimonious debate—does not remain merely an academic question. The WHO guidelines on nutrition care for TB allow the implementation of food support. In view of the increased risk of mortality, the guidelines even include hospitalization of patients with severe undernutrition until a BMI of 18.5 kg/m^2 is reached.[5] Yet, several experts quote the heterogeneity of demonstrated benefit of food supplementation in improving outcomes[6] as a reason for not including it in India's national policy. They perhaps overlook that none of the five trials in the Cochrane review managed to reach calorie intakes above the minimum recommended dietary allowances for an uninfected person! How can we then expect that these people would show significant weight gain? In at least two of these studies there was increased compliance with treatment as well as better weight

Fig 1. Images of patients with tuberculosis at Jan Swasthya Sahyog, October 2014

gain,[7] yet this assertion of a 'lack of adequate evidence' is being used as evidence of the lack of benefit[8] with food! The result is that patients with TB in the Revised National Tuberculosis Control Programme do not have any provision for food supplements regardless of their level of associated undernutrition. TB patients in India stopped getting supplementary food in1962 after a major trial failed to show additional benefit on disease quiescence.[9]

This conundrum leads us to ask, while the main effort of research is to answer questions, is it not more important to ask the right questions first? We know that malnutrition and underweight increase all-cause mortality, regardless of whether or not one hasTB. Here the clinical intervention would be nutritional therapy regardless of the aetiology of being underweight. So why does this question 'Should we offer food supplements to people with undernutrition and TB?' even arise? This is an example of the limits of induction.[10] We do not imply that we already know everything about this issue; there are important secondary questions which would benefit from more empirical studies. For example, what should nutritional therapy for TB patients consist of, or how is nutritional therapy best delivered in programme settings? This should be the focus of our enquiry and debate, not whether food is needed! In public policy, such demands for elusive evidence can often be a guise to avoid change and maintain status quo.

At Ganiyari, faced with the moral predicament of treating those adults who do not weigh even half as much as us, we have to work towards ensuring adequate food supplements for people with TB. People who are sick with TB and severe undernutrition deserve therapeutic nutrition support, as they would receive if they had severe undernutrition in any setting. Their need for calorie, proteins and micronutrients have to be higher than what is normally required. Their food packet could range from onsite or offsite daily rations, or even monthly rations. Besides cereal, *dals* and oil, in several programmes around the world the food packet has included beans, spray-dried milk, dried fish and eggs among other foods.[11,12] The support would also be dependent on the budget that the state allocates, as well as the problems of distribution of cooked food or those which spoil easily.

We are pleased to note that at the national level there now seems to be an acceptance towards adding supplemental nutrition in the care of TB, as was discussed in a recent meeting of the Central Tuberculosis Division, though the operational details are for the states to work out. In Chhattisgarh, there is a much stronger motivation to add food supplements, and we hope that the programme would be rolled out soon. However, this is not the end of the story. There is a larger role for food, and that is in preventing TB. While we argue for food supplements for about 1.5 million people who developTB annually in India, preventing TB in those 350 million Indians who have latent TB is possible only if they get adequate food. Undernutrition is a risk factor for the development of TB in at least half of the people[13] and thus ensuring adequate and balanced food for all makes sense so that, among its many benefits, fewer people get TB. Time will tell whether we will ever have a policy to ensure food adequacy for all, but the basis for such a decision is blowing in the wind.[14]

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