Calculation of New Cases of Tuberculosis from the Consumption of Antituberculosis Medications; Comparison with Notification Rates

P. Theodoracopoulosa
M. Dimadib
S.H. Constantopoulosb

Hellenic Thoracic Research Institute, Athens, Department of Medicine Pulmonary Section University of Ioannina, Greece

S.H. Constantopoulos, MD, Pulmonary Section, Department of Internal Medicine, University of Ioannina Medical School, GR-451 10 Ioannina (Greece)

Dear Sir,

The number of new cases of tuberculosis notified to the health authorities is commonly used as an epidemiological index [1, 2]. Notification of new cases of tuberculosis is compulsory in many countries; still many new cases are not reported [1, 3]. On the other hand, the total amount of antituberculosis medications in a given country, in any form, is known from the ‘Pharmaceutical Index’ [4]. Based on this information, we attempted to calculate the number of individuals treated for tuberculosis in Greece and thus, indirectly, the number of new cases between 1984 and 1988 and to compare this number with the official notification rate, as provided by the Greek Ministry of Health [5].

We used rifampicin as an index of antituberculosis treatment because it is used in practically all cases, it is rarely used for chemoprophylaxis, and its dose and duration of administration are well defined. None of the other antituberculosis medications share these properties. Isoniazid is used also for prophylaxis, while all others are used in only some cases and for a not well defined time. Rifampicin should be given for 6-9 months in the established ‘short-course’ antituberculosis regimens. Some physicians, however, still use the old 18-month regimen. Therefore, as a compromise, we assumed that 1 case of tuberculosis corresponds to the administration of 600 mg rifampicin daily for 12 months.

According to our calculations, the number of individuals treated for tuberculosis in Greece between 1984 and 1988 was 21,614 versus only 7,125 new cases reported from the Greek Ministry of Health (5,118 vs. 1,977 for 1984; 5,237 vs. 1,556 for 1985; 3,525 vs. 1,567 for 1986; 3,187 vs. 1,139 for 1957, and 3,749 vs. 886 for 1988). Thus, the number of individuals treated for tuberculosis in Greece between 1984 and 1988 was three times the official notification rate. This discrepancy may have several explanations, e.g., the use of rifampicin for conditions other than tuberculosis or for periods longer than 1 year, but the most likely is gross underreporting of new cases of tuberculosis.
It is very probable that this it is not unique for Greece. It is also possible that underreporting varies, from country to country and from year to year. Thus, we are faced with noncomparable reports from different countries and also with inaccurate reports on the trend of tuberculosis in a given country. For example, according to the Greek Ministry of Health the new cases of tuberculosis are dramatically declining between 1984 and 1988 (from 1,977 to 886). If, however, we look at the new cases according to our calculations, the number is not only much higher, but it shows a much smaller decline (from 5,118 in 1984 to 3,749 in 1988).

Therefore, we think that conclusions drawn (and comparisons made) from official notification rates are of uncertain value.

Acknowledgement

We thank Mrs. Paraskevi Gerodimou for her excellent secretarial assistance.

References