

The Resurgence of Tuberculosis

Tuberculosis is a resurgent disease in most regions of the world. Until the 1980s, the incidence of the disease remained steady or showed a slight decline in the developing nations, but since that time increases have been reported in many nations as a result of the HIV/AIDS pandemic. There has also been an absolute increase in prevalence as a result of the rapid increase in the population size.

There has also been an increase in the incidence of the disease in developed nations since the mid 1980s, but this must be seen in the perspective of a very low incidence compared with that of the developing nations. Nevertheless, the apparent return of a disease regarded by many as being almost extinct caused considerable consternation and fear among the medical profession and the general public, particularly in the USA as a result of a number of widely-publicised outbreaks in New York City (see below). This resurgence has been attributed to a combination of the HIV/AIDS pandemic, increasing inner city deprivation, the arrival of immigrants and refugees from countries with a high incidence of tuberculosis, a dismantling of surveillance and contact-tracing services, and a loss of diagnostic awareness and clinical skills (Reichman, 1991).

As a result of these and other factors, it is likely that the overall prevalence of tuberculosis will increase for the foreseeable future unless there are radical changes in the global effort to control this disease. The WHO has calculated that, in the absence of such changes, there will be 90 million new cases of tuberculosis and 30 million deaths in the final decade of the millennium and that the annual mortality could rise to four million by the year 2004.

Although not as common a cause of death as cardiovascular disease and cancer, tuberculosis differs from the former in that a highly effective treatment is available and that, by detecting infectious cases and rendering them non-infectious by such treatment, transmission could be prevented and the global burden of this disease thereby considerably reduced. Furthermore, as many patients with tuberculosis are young, and as therapy usually enables them to return to an active and

economically-productive life, often with no residual morbidity or disability, tuberculosis ranks among the most cost effective of all diseases to treat (Murray *et al.*, 1990). Indeed, it has been estimated that each year of life saved by effective anti-tuberculosis chemotherapy costs 90 US cents (about 60 UK pence).

The Impact of Control Measures

Effective therapy has, unfortunately, been the exception rather than the rule due to poor supervision of the patients. Although it might be argued that inefficient treatment services are better than none at all, poor therapy may actually be counterproductive for two reasons. First, repeated relapses of the disease prolongs the period of infectivity and facilitates spread of infection and, secondly, it favours the generation of drug- and multidrug-resistance.

In view of encouraging experiences in several countries, notably China (China Tuberculosis Control Collaboration, 1996) and Bangladesh (Chowdhury *et al.*, 1997) the WHO (World Health Organization, 1997a) has stressed that all anti-tuberculosis therapy should be administered under direct observation within the DOTS (Directly Observed Therapy, Short Course) strategy (Chapter 5). Owing to a number of restrictive factors, notably underfunding, only 10% of all cases of tuberculosis receive such therapy (World Health Organization, 1997a). The coverage of DOTS is summarised by the WHO region in Table 4, although within each of these regions the country-to-country variation in coverage varies enormously from almost total coverage to none at all.

Somewhat surprisingly, although a high percentage of patients in the Netherlands, Portugal, Slovenia and the Czech Republic receive DOTS, this strategy does not appear to be used to a significant extent in the European region, including most member states of the European Union. Coker and Miller (1997) have stated that DOTS cannot be implemented effectively in Britain owing to a national shortage of clinical nurse specialists and an unwillingness or inability of district nurses to take on this service.