Correspondence

Clinical and Microbiological Efficacy of Adjunctive Salvage Therapy with Inhaled Aminoglycosides in a Patient with Refractory Cavitary Pulmonary Tuberculosis

Str—We read with great interest the study by Sacks et al. [1] regarding the use of adjunctive salvage therapy with inhaled aminoglycosides for the treatment of patients with persistent smear-positive pulmonary tuberculosis (TB). We would like to stress that such treatment may be microbiologically and also clinically effective in patients with refractory abscessed and cavitary pulmonary TB.

In 1994, a 28-year-old African patient from Guinea was admitted to our hospital with fever, weight loss, productive cough, and respiratory distress. He had been living in France for 2 months, and his past medical history was unremarkable. Chest radiography and CT revealed numerous abscessed lesions in the right lung and 2 large cavities in the left lung (diameter, 5 cm and 7 cm). Hypoxemia (partial pressure of oxygen, 60 mm Hg) was also noticed. Sputum smears examined with Ziehl-Neelsen staining were positive for acid-fast bacillus (AFB), and serological tests were negative for HIV.

The patient was immediately treated with standard antituberculosis therapy that included isoniazid, rifampin, ethambutol, pyrazinamide, and streptomycin (streptomycin dose, 750 mg/J). On day 15 after initiation of treatment, he was still febrile and had sputum smears that were positive for AFB. Because he had cachexia and major pulmonary involvement, the patient was refused for surgery. Clarithromycin (2 g/J) and prednisolone (2 mg/kg/day) were added to the treatment. On day 30 after initiation of treatment, cultures of sputum samples yielded Mycobacterium tuberculosis that was susceptible to all antituberculosis drugs. Clarithromycin was replaced by amoxicillin-clavulanate (6 g of amoxicillin each day). Treatment with all other drugs was maintained, with the exception of prednisolone, which was gradually discontinued after 3 weeks of treatment; the potential side effects of such treatment were carefully monitored.

After having received full doses of treatment for 5 months, the patient remained febrile, and his sputum smears remained positive for AFB. Therefore, aerosolized streptomycin therapy was initiated (500 mg of streptomycin diluted in 8 mL of 1.4% bicarbonate saline solution and administrated twice a day by use of the nebulizer Respiron [Respiflo]). Apyrexia was noted 1 week later, and sputum smears became negative for AFB. Aerosolized therapy was continued for 1 month. Chest radiography demonstrated strong improvement, and the patient became normoxemic. He was discharged from the hospital (6 months after admission) with instructions to follow a 4-month regimen that involved rifampin and isoniazid. Three months later, his body weight had increased by >15 kg and he remained healthy.

This case report was published in 1995 in a French journal that is not referenced in all MEDLINE databases [2]. This may be why it was not cited in the report by Sacks et al. [1]. In their study, AFB sputum smear status is the main criterion evaluated at follow-up. Although a strong clinical efficacy of inhaled aminoglycoside therapy was also noticed in our patient, it is difficult to definitively confirm that inhaled aminoglycosides alone were involved in the cure of the patient’s condition, considering the treatment that he had previously received and the broad spectrum of responses to antituberculosis therapy. However, it is difficult for antituberculosis drugs, including parenteral aminoglycosides, to reach and be efficient in the acid environment of the cavities of the lung [3]. Therefore, the use of inhaled aminoglycosides (in particular when they are diluted in an alkaline solution, as suggested by D. Raoult in our case) may improve the efficacy of treatment for patients with refractory abscessed and cavitary pulmonary TB. A comparable treatment efficacy was demonstrated in 3 more patients who received this adjunctive salvage therapy in our unit. We believe that controlled studies are now warranted to confirm these reports.

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References

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