



Article original

Drug-resistant tuberculosis to an 8-month-old infant in the service of pneumo-phthisiology of Ignace Deen National Hospital

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Abstract

Surveillance of contact subjects or paediatric cases is an indicator of the dynamics of the circulation of Mycobacterium tuberculosis stump within a community. Pediatric cases are a sentinel reference. We report a case of drug-resistant tuberculosis to an 8-month-old infant whose mother was diagnosed with drug-resistant tuberculosis and died after few months later. This observation highlights the need for contact education on TB preventive measures and warning signs that could contribute on the one hand to the reduction of contamination and on the other hand to early diagnosis.

Proper management and supervised treatment guarantee a cure in almost cases.

Keywords: Drug-resistant tuberculosis, Clinical case, Ignace Deen National Hospital.

Introduction

Whether the incidence of tuberculosis (TB) is slowly decreasing globally and nationally (8.1 cases/100,000 inhabitants), the emergence and spread of multidrug-resistant (MR) Mycobacterium tuberculosis is a major health issue [1].

Among new TB cases diagnosed annually in the worldwide, the proportion of MDR-TB is 3.6% [2]. Surveillance of contact subjects or paediatric cases is an indicator of the dynamics of circulation of Mycobacterium tuberculosis stump within a community. Pediatric cases are a sentinel reference. Indeed, after contact with a tuberculosis patient, children have a faster and higher risk of progression to the disease [3].

The discovery in August 2016 of a case of pharmaco-resistant TB to an 8-month-old infant aroused our interest, whence the present study.

Clinical case

She is an 8-month-old girl, contact subject of a TB-RR case (biological mother) who consulted for a weight loss at 4 kg and a fever without coughing or sputum evolving since 3 months ago.

She had consulted in a lot of sanitary structures where she received treatment with analgesics and non-specific antibiotics. Giveng the exacerbation of the signs, she consulted the Pneumo-Phtisiology Service of Ignace Deen National Hospital for better care.

On examination, we noted an unsatisfied general

status and malnutrition with a weight of 6.3 kg. Antero-posterior chest radiographs revealed abnormalities in the upper lobe of the right lung. seeing these suspicious signs of tuberculosis we looked to confirm using Gene Xpert MTB / RIF and the culture on the solid milieu of Löwenstein-Jensen after gastric tubing.

Gene Xpert MTB / RIF detected the presence of a rifampicin-resistant stump of *Mycobacterium tuberculosis* and the culture was positive at two crosses (2+).

A pre-therapeutic check-up was carried out and did not reveal any particularities. These included HIV serology, blood count, serum creatinemia, serum potassium, TSH test, SGPT, SGOT, ECG.

She was submitted to the short scheme (9 months): 4 months of Kanamycin / Moxifloxacin / Prothionamide / Isoniazid high dose / Clofazimine / Ethambutol / Pyrazinamide for the intensive phase followed by 5 months of Moxifloxacin / Clofazimine / Ethambutol / Pyrazinamide for the continuation phase [4 (KmMfxPtoHCfzEZ) / 5 (MfxCfzEZ)].

The 3rd and 7th months were marked by the episodes of fever that were controlled by Paracetamol in the 3rd and Paracetamol and Artémether – Luméfántrine in the 7th month.

She has been converted during the first month of treatment and declared cured on 10/07/2017.

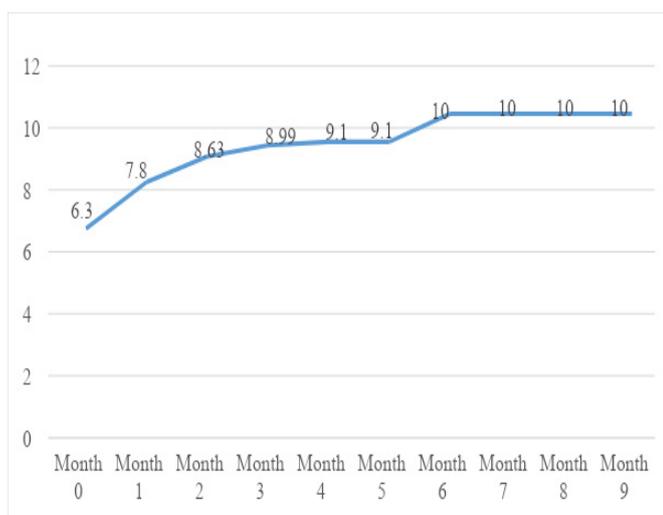


Figure 1: Monthly weighing results of the case

Table I: Weighing results and control of the infant's gastric fluid

Months	Bacilloscopy	Xpert MTB/RIF	Culture
Month 0	-	MTB detected and Rifampicin Resistance	2+
Month 1	Negative		Negative
Month 2	Negative		Negative
Month 3	Negative		Negative
Month 4	Negative		Negative
Month 5	Negative		Negative
Month 6	Negative		Negative
Month 7	Negative		Negative
Month 8	Negative		Negative
Month 9	Negative		Negative

Discussion

In 2016 in Guinea, WHO estimated 360 (96-630) cases of MDR/MDR-TB among reported pulmonary TB cases.

Because of their immunity, the child's disease develops more often in the immediate aftermath of a recent tuberculosis infection [4].

The source of infection is most often an adult, even if the transmission from child to child is possible [5]; although rare, tuberculosis bacilleamia during pregnancy may be responsible for placental damage and/or the maternal genital tract. The fetus can be contaminated either by blood from the placenta or by inhalation and/or ingestion of contaminated amniotic fluid [4].

In our context, it may be that the infant was contaminated after birth from his mother confirmed TB-resistant to rifampin (RR) who subsequently died, but it is still difficult to distinguish that one from congenital contamination [4].

In contrast, in Cameroon in 2018, a 6-year-old

child with MDR-TB was reported by Christelle G.J. et al. The mother's contamination of the child was highlighted by the antibiotic susceptibility test of the various samples, which concluded that *Mycobacterium tuberculosis* stump with the same resistance profile were detected to both [6]. We have not highlighted this in this case.

The time between the first signs and diagnosis was about 3 months. This indicates the absence of systematic screening in contact cases or at least surveillance of contact cases for early diagnosis of TB.

Educating contacts about TB preventive measures and warning signs could contribute to reduce the contamination and early diagnosis.

Culture conversion and weight gain allowed us to assess response to treatment. The weight increased from 6.3 kg at the beginning of the treatment to 10 kg at the end of the treatment. Although weight gain is an indicator of successful treatment, the recovery takes in account the culture.

Conclusion

The MDR-TB to a child is difficult to diagnose, emphasis should be placed on contact monitoring for early detection. Efforts should be made to adopt systematic screening for tuberculosis to the contacts at the early age.

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Conflict of interest : None

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