Prevalence and distribution of Buruli ulcer in the Songololo Territory, Democratic Republic of Congo

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Table 1
Prevalence of Buruli ulcer in the Territory of Songololo, July-August 2008

<table>
<thead>
<tr>
<th>Health Zone</th>
<th>Population</th>
<th>BU case Total</th>
<th>Active BU</th>
<th>Inactive UB</th>
<th>Global prevalence/105</th>
<th>Active BU prevalence/105</th>
<th>Inactive BU prevalence/105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kimpese</td>
<td>146,108</td>
<td>376</td>
<td>141</td>
<td>235</td>
<td>257.3</td>
<td>96.5</td>
<td>160.8</td>
</tr>
<tr>
<td>Nsona-Mpangu</td>
<td>91,310</td>
<td>399</td>
<td>118</td>
<td>281</td>
<td>437.0</td>
<td>129.2</td>
<td>307.7</td>
</tr>
<tr>
<td>Total</td>
<td>237,418</td>
<td>775</td>
<td>259</td>
<td>516</td>
<td>326.4</td>
<td>109.1</td>
<td>217.3</td>
</tr>
</tbody>
</table>

Background: Cutaneous infection by *Mycobacterium ulcerans*, also known as Buruli ulcer (BU), represents the third most common mycobacterial disease in the world after tuberculosis and leprosy. The General Reference Hospital (GRH) of the “Institut Médical Evangélique” (IME) of Kimpese, located in Songololo, launched a BU control project in 2004. Although a recent study have shown a strong increase in the number of admitted BU cases after the start of the Project, data on the exact prevalence and burden of disease in the Territory was lacking. This study aimed to assess the prevalence and the distribution of BU, and to determine the project coverage in the Songololo Territory.

Methods: We conducted a two-month (July-August 2008) cross-sectional survey using the door to door method simultaneously in the two rural health zones (RHZ) of the Songololo Territory (RHZ of Kimpese and Nsona-Mpangu), containing each twenty health areas. Cases were defined clinically as active (evolutive) BU and inactive (healed) BU in accordance with WHO-case definitions.

Results: Out of a total population of 237,418 inhabitants, 775 BU patients were detected with 259 active and 516 inactive cases (Table 1). The overall prevalence of BU in Songololo Territory was 326.4/100,000 inhabitants, varying from 0 to 2751.5/100,000 inhabitants between health areas. The geographical distribution is presented in Figure 1. Of the 259 patients with active BU detected, 25 were admitted in the GRH IME/Kimpese from January to August 2008. Thus, the project coverage was 10% only.

Conclusion: Our study highlights the need of considering new control strategies which are both socially and financially acceptable and appropriate for the concerned communities. Decentralization and integration of BU control activities may improve access to diagnosis and care at the most peripheral level of the health system. A close collaboration between the BU control project and the health zones is essential for the implementation of a simple, functional,
Drug resistant tuberculosis in urban Thai children: a 10 year review

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**Background:** Problem of drug resistant tuberculosis (DR-TB) has currently gained a major concern in magnitude. In the settings where the rates of DR-TB may be high, initial treatment regimen may be modified by knowledge of the resistance patterns. We aimed to determine the prevalence, susceptibility pattern, and risk factors of drug resistant tuberculosis in pediatric patients.

**Methods:** Retrospective descriptive study was conducted in children (0-18 years) receiving care at Queen Sirikit National Institute of Child Health who had positive culture and available susceptibility pattern of *M. tuberculosis*. Drug resistant tuberculosis (DR-TB) was defined as resistance to at least one of antituberculosis drugs.

**Results:** Susceptibility results were available in 78 cases (85.7%) out of 91 positive cultures for *M. tuberculosis*. The sensitivity of tuberculin test using the cut-off point of 10 mm. induration for non-HIV infected patient, and 5 mm. induration for HIV infected patients were 71.4% and 14.3% respectively. Resistance to at least one anti-tuberculosis drug were found in 22 cases (28.2%) for which streptomycin resistance being the most common (21.7%) followed by isoniazid (11.5%) and rifampicin (5.1%). Multi-drug resistance (MDR), i.e. resistance to at least both isoniazid and rifampicin, was observed in 3 cases (3.8%) of cases. A history of previous treatment and bone and joint involvement were significantly higher for DR-TB cases: 18.2% vs. 1.8%, p = 0.0078 and 22.7 vs. 1.8%, p = 0.0018, for DR-TB and drug susceptible-tuberculosis, respectively. Cases with DR-TB were significantly less likely to complete their treatment course compared to their counterpart (54.5% vs. 87.5%, p = 0.0018). No significant differences in resistance rate by age, gender, clinical presentations, HIV serostatus was observed. Case fatality rates were 1.7% and 4.5% for drug susceptible and drug resistant tuberculosis.

**Conclusion:** The sensitivity of tuberculin skin test in detecting culture-proven tuberculosis test was rather low among both HIV infected and non-HIV infected children. The rates of isoniazid and streptomycin resistance are causes of concern. History of previous treatment, involvement of bone and joint were associated with drug resistant tuberculosis. Ethambutol may be preferable compared to streptomycin in an empirical treatment regimen due to the high rate of streptomycin resistance.

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