Diagnosing tuberculosis in children using the new WHO algorithm in Niger

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**Background**

Médecins Sans Frontières (MSF) in Maradi, Niger since 2014: Paediatric (<5 years) and nutrition project

Underdiagnosis of TB in children

- Average of 35 TB cases/year amongst 24,000 children treated for severe acute malnutrition (SAM) every year (Figures 2-3)

Treatment decision algorithms for pulmonary TB (PTB) in children (Figure 1)

- Recommended by World Health Organisation to increase diagnosis of TB

**Methods**

Implementation of algorithms in:

- Madarounfa District Hospital: Inpatient Therapeutic Feeding Centre (ITFC) and paediatric ward
- Dan Issa Ambulatory Therapeutic Feeding Centre (ATFC)

Definition of presumptive TB:

ATFC and paediatric ward: Symptoms suggestive of PTB (cough > 2 weeks, fever > 2 weeks, close contact with a TB case, no response to medical/intravenous treatment

ITFC: All hospitalised SAM children

**Figure 1: Treatment decision algorithms**

**Conclusions**

- 5 times more TB cases diagnosed compared to the 5 preceding years after introduction of treatment decision algorithms
- Positivity of bacteriological examinations as expected
- High number of TB cases amongst hospitalised SAM children

**Results**

**Figure 2: SAM children diagnosed with PTB in Madarounfa (MSF OCP), 2022-2023**

- Start of implementation June 2023
- 95 SAM children diagnosed with TB in 2023
- 73 (77%) from June to November
- >10 times more than in the same period of 2022

**Figure 3: Paediatric PTB cases notified in Madarounfa (MSF OCP), 2018-2022**

- 79 children diagnosed with TB in 6 months
  - 6 in paediatric ward
  - 73 SAM (Table 1)
  - 59 in ITFC
  - 14 in ATFC
- 5 times more than the average of 2018-2022

**Table 1: SAM children evaluated with WHO algorithm for PTB in ATFC and ITFC**

<table>
<thead>
<tr>
<th>SAM children</th>
<th>Admitted</th>
<th>Evaluated with algorithm</th>
<th>Started on TB treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATFC</td>
<td>7161</td>
<td>33 (0.46%)</td>
<td>14 (42%)</td>
</tr>
<tr>
<td>ITFC</td>
<td>2941</td>
<td>2033 (69%)</td>
<td>59 (3%)</td>
</tr>
</tbody>
</table>

**Table 2: Xpert tests results (more than one sample/patient)**

<table>
<thead>
<tr>
<th>Xpert tests done</th>
<th>Stool</th>
<th>Gastric aspiration</th>
<th>CSF</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>138</td>
<td>142</td>
<td>1</td>
<td></td>
<td>281</td>
</tr>
<tr>
<td>Xpert tests positive</td>
<td>7(5%)</td>
<td>9(6.3%)</td>
<td>1</td>
<td>17 (6%, 10 children)</td>
</tr>
</tbody>
</table>

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