



Paediatric Diagnosis and Treatment of Tuberculosis

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The problem of child TB is...

BIG	In high burden settings: <i>~ 15 - 20% of TB cases</i>
UNDERESTIMATED	Diagnostic difficulties Poor reporting
GROWING	Increase in adult TB burden + Age and gender shift of epidemic <i>= more children exposed to TB</i>

Regional Burden



- EU/EEA
- Almost 40 000 child TB cases notified in the past decade
- Only 1 in 6 were confirmed with culture
- In 2009 alone:
 - More than 3 300 cases notified
 - 4.2% of all notified TB cases in the EU/EEA
- Reflection of TB transmission in the community

Diagnosis

What are the practical challenges?



- Health staff often don't think about TB
- Remote health staff often not trained in TB
- Huge reluctance to treat without 'proof'
- High clinical workload
- Difficult to follow up children
- Contact tracing is often poorly done

Diagnosis

How good are the tools we have?



- **Microscopy and culture**

Limited by: Paucibacillary disease in children

Difficulty to obtain samples

- **Chest X-ray**

Limited by: Quality of films

Difficulty to interpret in children

Diagnosis

How good are the tools we have?



- **Tuberculin Skin Test**

Limited by: Practical constraints

Complex interpretation

- **'Scores'**

Limited by: Lack of validation

Wide variation in performance

Diagnosis



The practical challenges PLUS The available tools

equals

AN EXTREMELY POOR DIAGNOSTIC CAPACITY

Improving Diagnosis

What is needed?



In the short term

- To optimize the use of existing tools
but at the same time:
- To encourage clinicians to rely on their clinical judgement on whether to treat or not to treat

In the longer term

- A diagnostic method adapted for children

Treatment

Drug Sensitive TB



What's New?

- Revised 1st line drug dosages (WHO 2009)
- Use of 4 drug intensive phase
- Phasing out of Streptomycin
- Revised regimens for TB meningitis and Osteo-articular TB

References:

1. WHO Rapid Advice – Treatment of Tuberculosis in Children 2010
2. Desk-guide for diagnosis and management of TB in children (IUATLD) 2011

Treatment

Drug Resistant TB



- Lack of data
- Same treatment principles as for adults
- If no DST of child available, treatment is planned based on the DST of the index case
- Drug formulations
 - not adapted at all
 - need careful calculation and administration
 - none are absolutely contraindicated

Children generally do well and have good outcomes

Treatment

The priorities



- 1. Urgent need for safety and efficacy data for 2nd line TB drugs in children**
- 2. Urgent need for more studies on the optimal paediatric dosages**
both 1st and 2nd line drugs
- 3. Urgent need for improved formulations**
both 1st and 2nd line drugs
- 4. Urgent need for data on optimal DR TB treatment regimens and duration in children**

Summary



Children carry a burden of TB disease that has long been underestimated

Child TB requires particular attention within National TB programs

Much more research is needed – from diverse settings

A diagnostic method adapted for children is greatly needed

The development of drug formulations that allow feasible dosing recommendations is urgent



Thank you