Diagnostic of Chagas disease
Challenge for laboratory in MSF projects

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MSF in Bolivia

- **Msf in Bolivia since 2002**
- **Actually Cochabamba**
  - Urban and rural setting
  - Diangostic and treatment offer to All age groups (up to 45y)

Challenges:

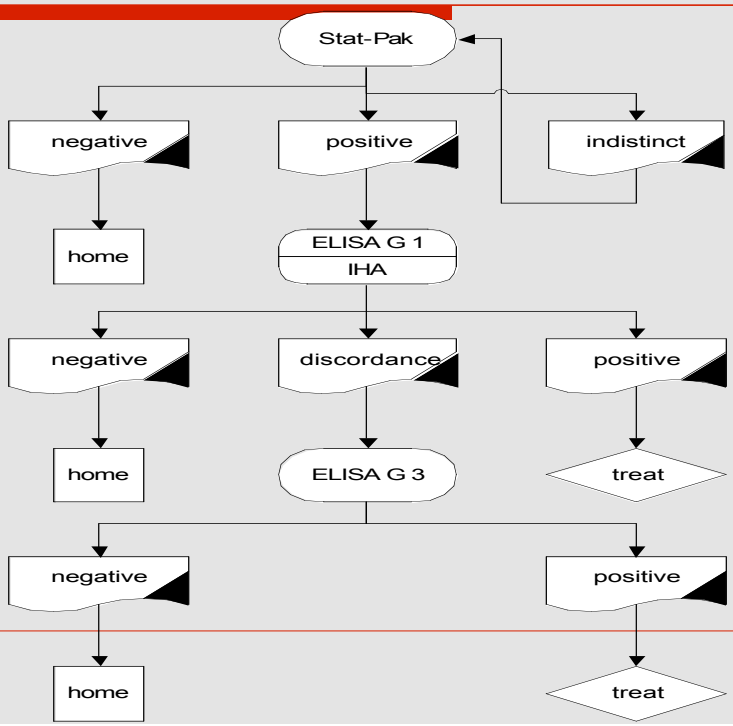
- **Lab network**
- **Integration in existing health care system**

Tests used on MSF project

- Rapid tests
  - Stat-Pak® [Chembio Inc, USA]

- Serological tests
  - ELISA 1st generation [Wiener SAIC, Argentina]
  - ELISA Recombinant [Wiener SAIC, Argentina]
  - IHA [Lemos SRL, Argentina]

Diagnostic Tree use in MSF program



Constraints (1)

- **RDT- StatPak-chagas ®**
  - Low sensitivity on whole blood ➔ to be use only as a secreening tool
- **ELISA / IHA**
  - Complexity of protocols
  - Technology needed (equipment, HHRR)
  - Need to be done in serie not individual test (cost/effectiveness)

Constraints (2)

- Delay in diagnostic (1 week or more)
  - Increase risk of patient diagnose and not coming for treatment
- Limit access to diagnostic for remote rural areas

NEW Diagnostic tools needed

- Simplification of diagnostic tree
  - Ideal – 1 test for diagnosis (RDT)
  - Minimum – diagnostic tree base on the combination of 2 RDTs
- Test of cure
  - none available yet
- **IMPROVING DIAGNOSIS IS KEY TO INCREASE THE NUMBER OF PEOPLE TREATED**

RDTs - needs

- High specificity and sensitivity with whole blood
- No cold chain, no machine …. No lab !
- Valid for all T.Cruzi species
- All material include in the kit
- Affordable price (less than 1 $USD)

TEST OF CURE

- Identification of new Bio-markers for chagas

Main target for use:

- Follow-up of patient post-treatment
- Validation of new drugs (efficacy)

Current situation

- **RDTs** ➔ numerous new test available
  - Need validation under field condition (whole blood) – expected to be done by 2010 (WHO/MSF/national programs coordination)
- **Test of cure**:

NEED TO MOBILIZE RESEARCH PROGRAMS AND FUNDING MECHANISEMS TO ALLOWED THE DEVELOPMENT OF AN ADEQUATE TEST OF CURE FOR CHAGAS

In the meantime … PCR (1) (Polymerase Chain Reaction)

- PCR can be use:
  - Diagnostic
  - Follow-up.
- Constraints:
  - Even if 1 Protocol standardized (WHO/TDR-2008), still many "home-made" PCR used
  - Only qualitative PCR is validated
  - Sensitivity around 75%

In the meantime … PCR (2) (constraints -2)

Constraints (2):

- No consensus on sampling-model pre-post Tx
- No consensus on schedule for "cure"
  - 6months, 12 months 24 months ?

Conclusion

- You cannot treat if you cannot diagnose: Diagnostics as an entry point and exit
- Research laboratories must continue to improve existing tools and develop new techniques
- Funds must be available to improve diagnostic tools and develop a test of cure

Thank you for your attention

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