

Comparison of IGRA and TST for screening for LTBI in HCWs

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AIM

To compare the effectiveness
of the QuantiFERON-TB Gold In-Tube assay
(QFT-GIT[®])
versus the tuberculin skin test (TST)
for screening health care workers (HCWs)
for latent tuberculosis infection (LTBI)
in Padua Hospital, Italy

METHODS (1)

Between Sept. 1, 2006 and Sept. 30, 2007

1715 HCWs

classified according to CDC

“Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health care settings, 2005”

requested to perform

both a TST

and a blood sample for QFT-GIT®

METHODS (2)

897 “Low Risk”

requested to perform baseline TB screening;

420 “Medium Risk”

requested to perform baseline TB screening
and then serial screening every 12 months;

375 “Potential Ongoing Transmission”

requested to perform TB screening
as soon as possible at the time of exposure
and another test 8-10 weeks after

METHODS (3)

TST was performed according to international standard protocol by experienced staff

Blood was collected in three heparinized tubes for QFT-GIT[®] and processed according to the manufacturer's instructions

In serial testing, each test was compared with the responses of the same test performed in previous screenings

TST and QFT-GIT[®] results were compared

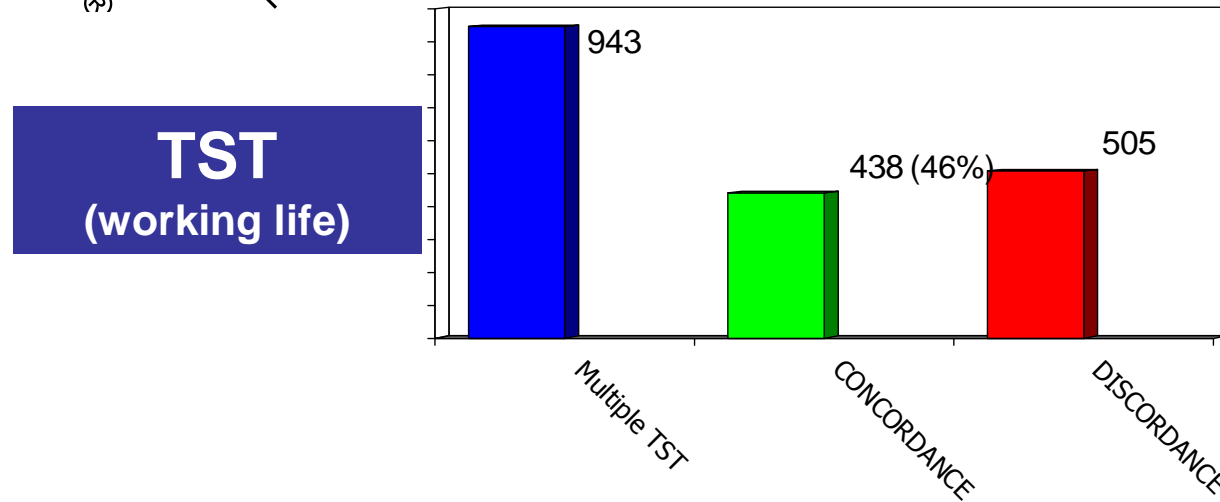
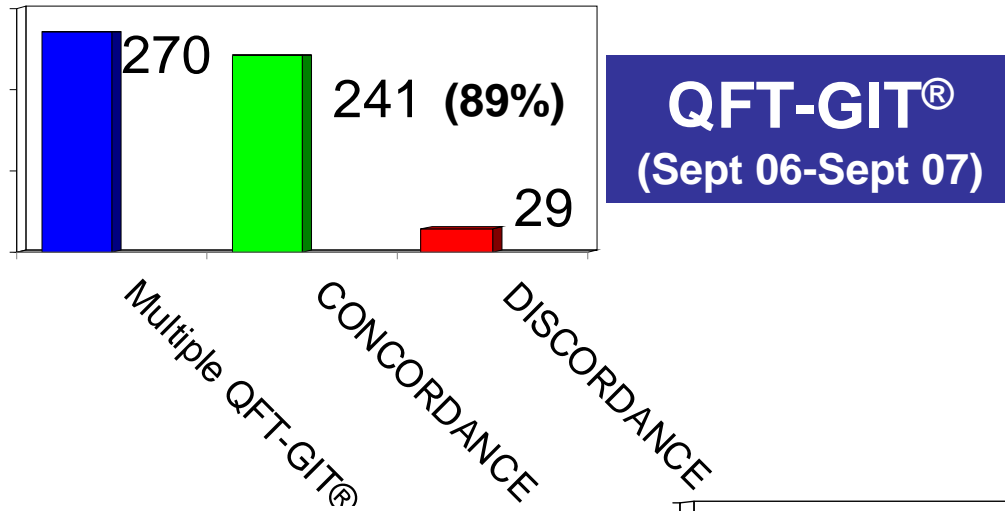
RESULTS (1)

Number of subjects and tests performed

N. of subjects (%)	N. of QFT-GIT [®] performed (Sept 06-Sept 07)	N. of subjects (%)	N. of TSTs performed (working life)
23 (1)	0	367 (21)	0
1422 (83)	1	405 (24)	1
270 (16)	Multiple	943 (55)	Multiple
1715 (100)	Total	1715 (100)	Total

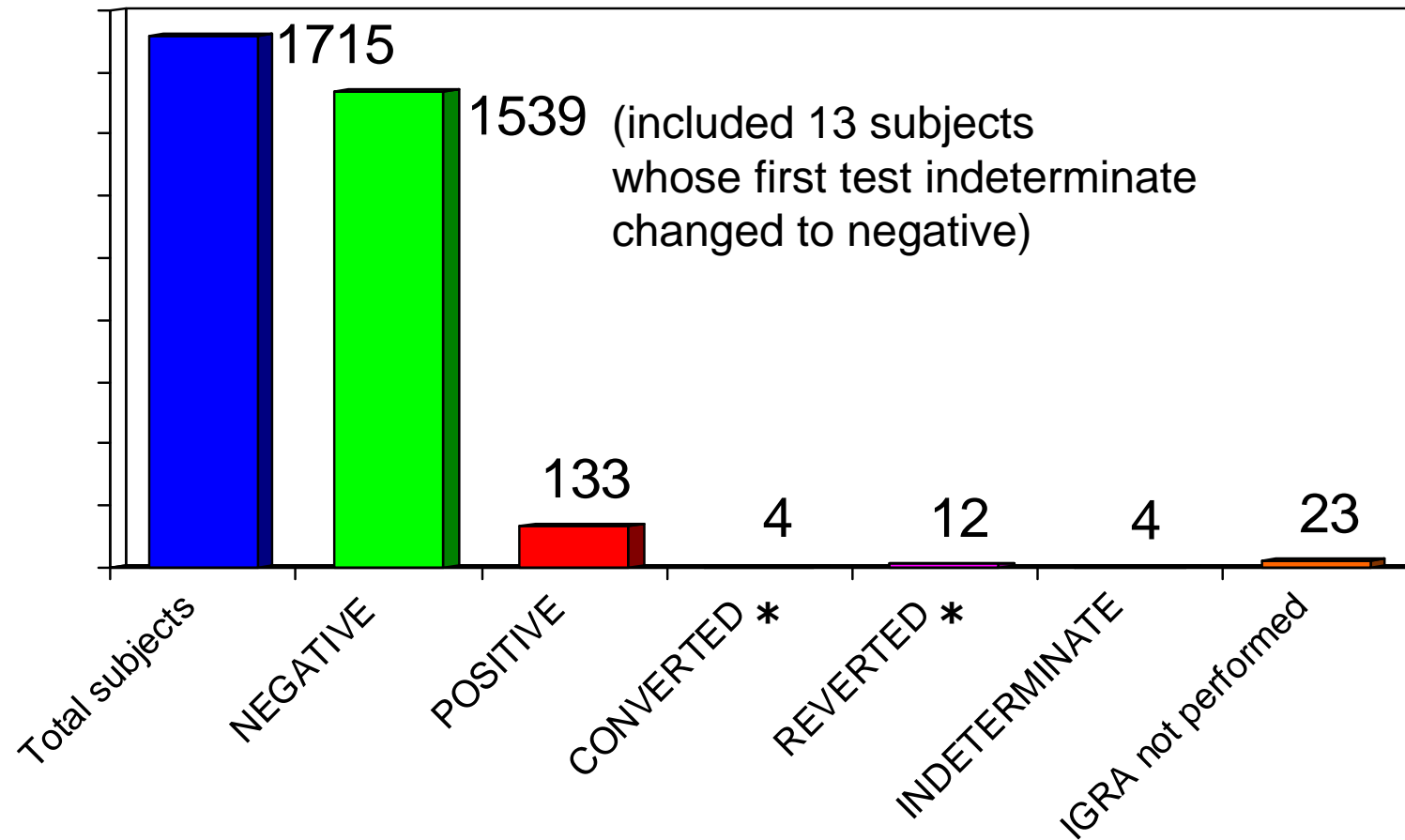
RESULTS (2)

Concordance in serial testing



RESULTS (3)

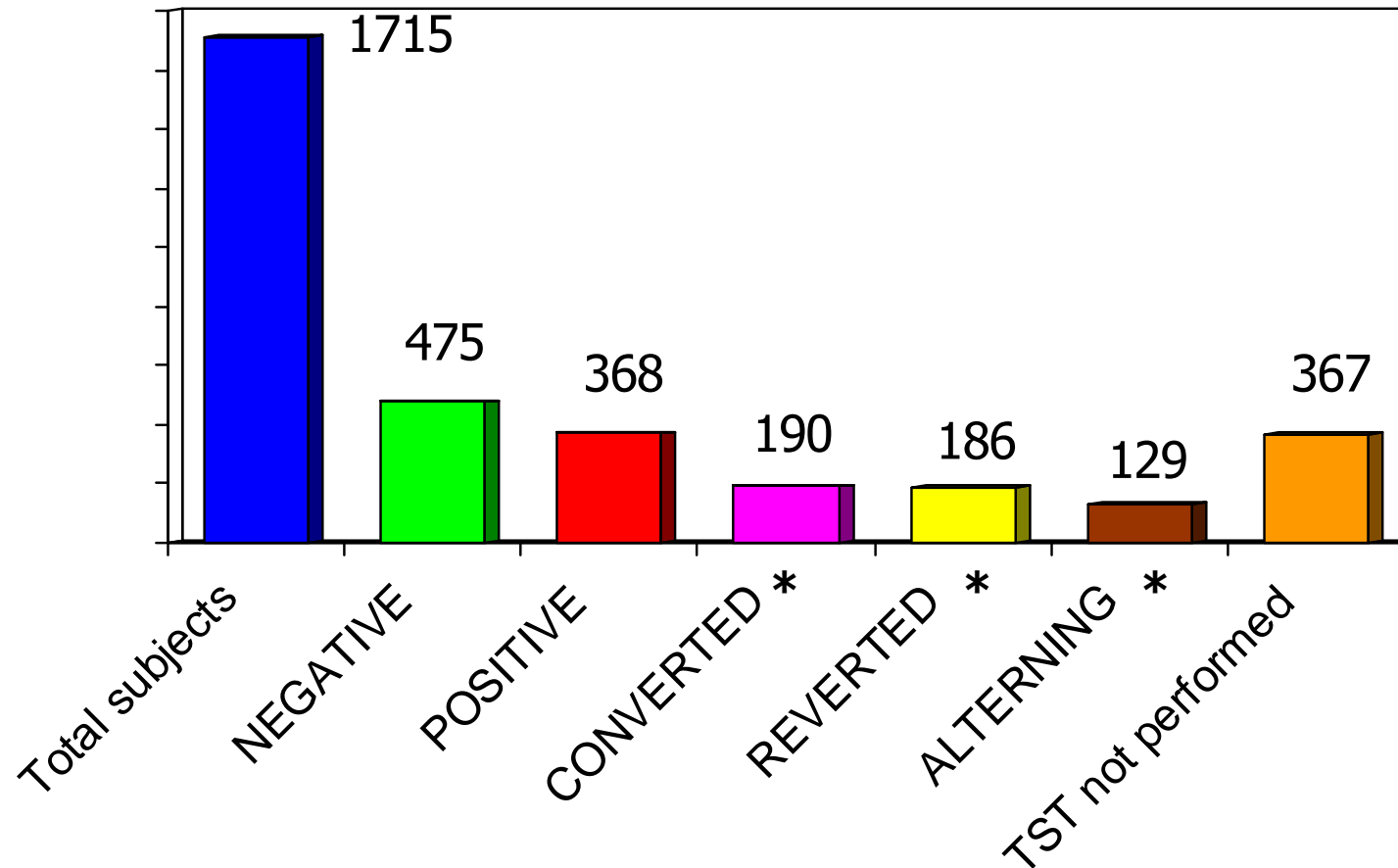
QFT-GIT[®] results



* according to the manufacturer's cut-off

RESULTS (4)

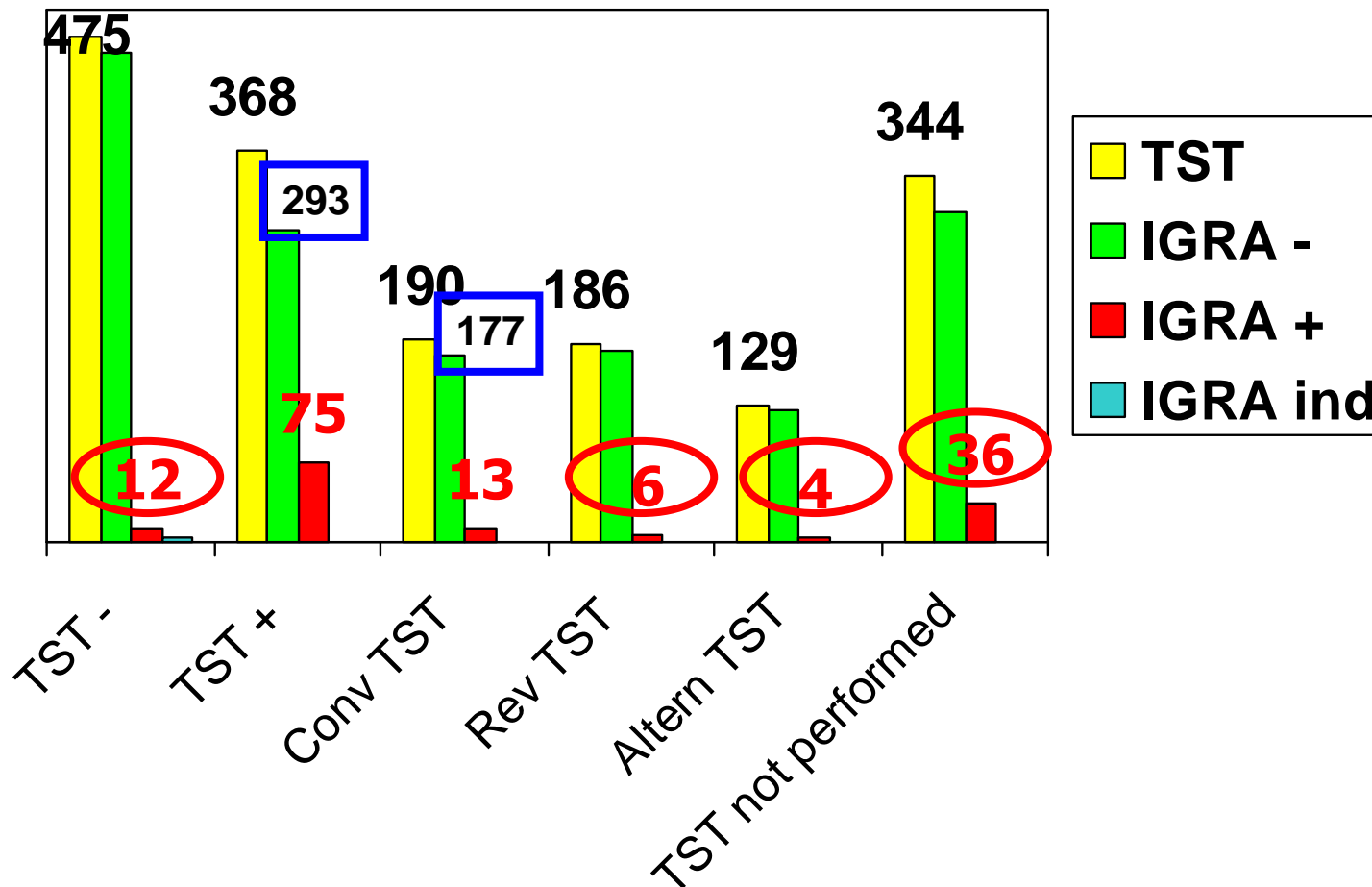
TST results



* increase/decrease in reaction size ≥ 0.6 mm, *Am J Respir Crit Care Med*, 1999;159:15-21

RESULTS (5)

Comparison between QFT-GIT[®] and TST results



RESULTS (6)

Comparison between QFT-GIT[®] and TST results

58 HCWs identified as having LTBI by QFT-GIT[®],
not by TST:

12 negative TST

6 reverted TST

4 alternating TST

36 TST not performed

470 HCWs identified as having LTBI by TST,
not confirmed by QFT-GIT[®]:

293 positive TST

177 converted TST

CONCLUSIONS (1)

- More compliance to QFT-GIT[®] than to TST (99% vs. 79% of HCWs performed the test)
- QFT-GIT[®] results more reproducible in serial testing than TST (89% vs. 46% concordance)

CONCLUSIONS (2)

Considering that all studies from low-prevalence countries strongly suggest that the RD1 antigen-based assays are more accurate than TST- and PPD-based assays for diagnosis of LTBI:

- 58 HCWs positive for ITBL identified only by QFT-GIT[®] - 4% of all HCWs in the study
- 470 HCWs false-positive for ITBL identified by QFT-GIT[®] - 27% of all HCWs in the study

CONCLUSIONS (3)

- Organizational convenience
- Clinical benefits of fewer potential false-negative results
- Savings of fewer potential false-positive results

make the use of IGRAs
the most efficient strategy
in the diagnosis of LTBI in HCWs
in low prevalence countries