

The High Positive Immunoassay Confirms HIV-1 Infection and Avoids the Need of Confirmatory Tests

Authors: Rodolfo J. Ochoa-Jiménez, Mónica Ríos-Silva, Joana Cortez-Mares, Ana M. Contreras, Laura Dávalos-Gómez, Benjamín Trujillo-Hernández

The Department of Internal Medicine and the Clinic of Sexually Transmitted Diseases, Regional Hospital of Colima

The Department of Internal Medicine, General Hospital 1, Colima, and the Health Research Council in Jalisco State, Mexican Institute of Social Security

Background

- HIV IAs are traditionally interpreted in a qualitative manner
 - Reactive (positive) or non-reactive (negative)
 - A quantitative result is generated and expressed as a signal-to-cutoff ratio (reactivity index) of each individual sample
 - **The S/CO ratio is directly related to the antibodies concentration**
- Previous studies
 - A high S/CO of HIV IA was associated with true positive results

Objectives of the study

“To assess whether a high S/CO ratio of an HIV third-generation enzymatic IA is an accurate predictor of confirmatory results in patients with positive HIV antibodies test”

Materials & Methods

- Public Health Laboratory of Colima
- Diagnostic test design (retrolective)
- Eligible
 - Positive HIV IA (2)
 - ≥ 13 years
 - Not pregnant
 - **Patients setting (High prevalence)**

Laboratory Tests

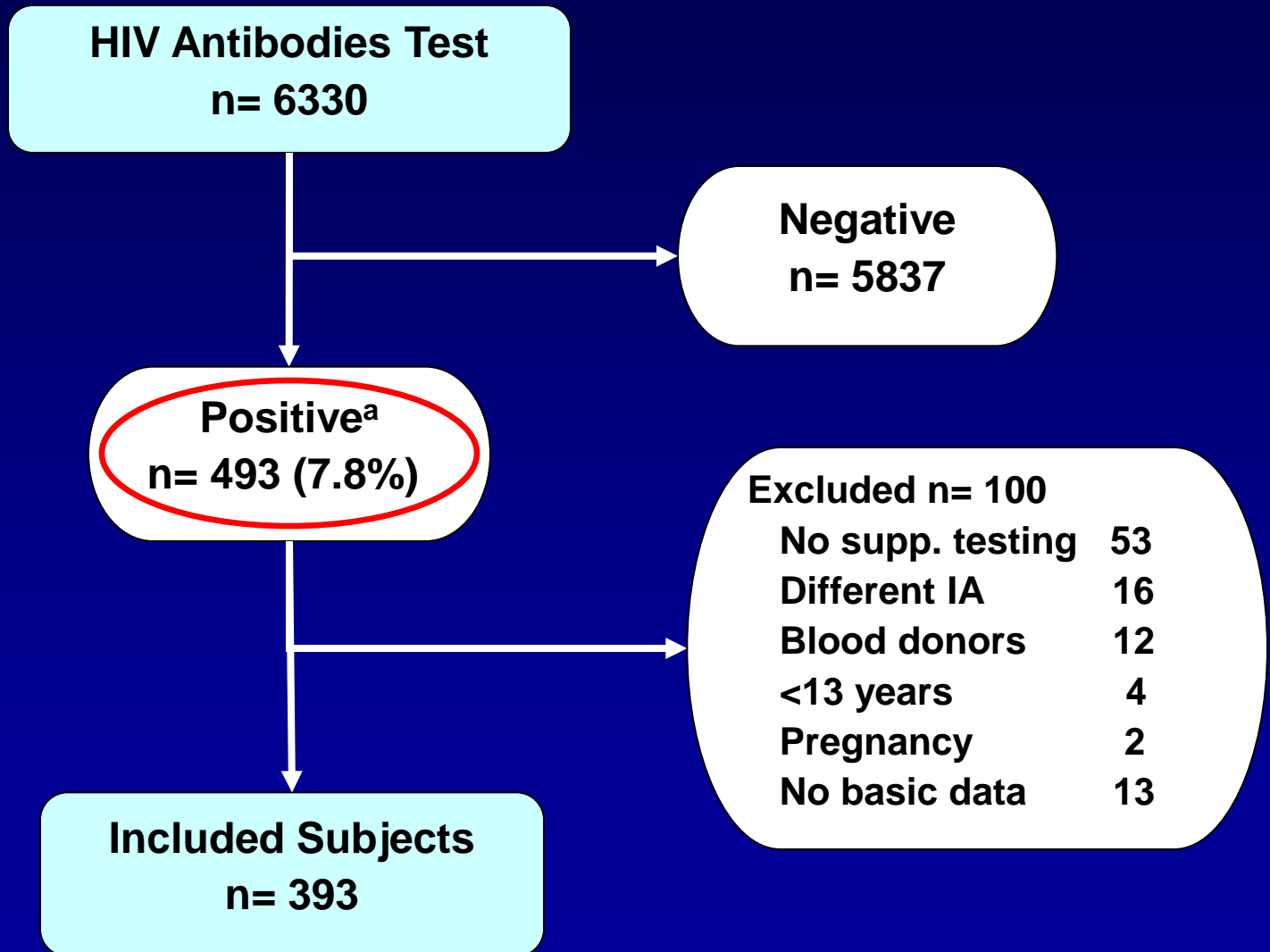
- Vironostika 1 Microelisa System
 - Automated equipment
 - S/CO ratio recorded from the analyzer
- Cobas Amplicor HIV-1 Monitor, v 1.5
 - Quantitative HIV-1 RNA test
 - Reverse transcription–polymerase chain reaction
- Cambridge Biotech HIV-1, Western Blot Kit

Gold Standard

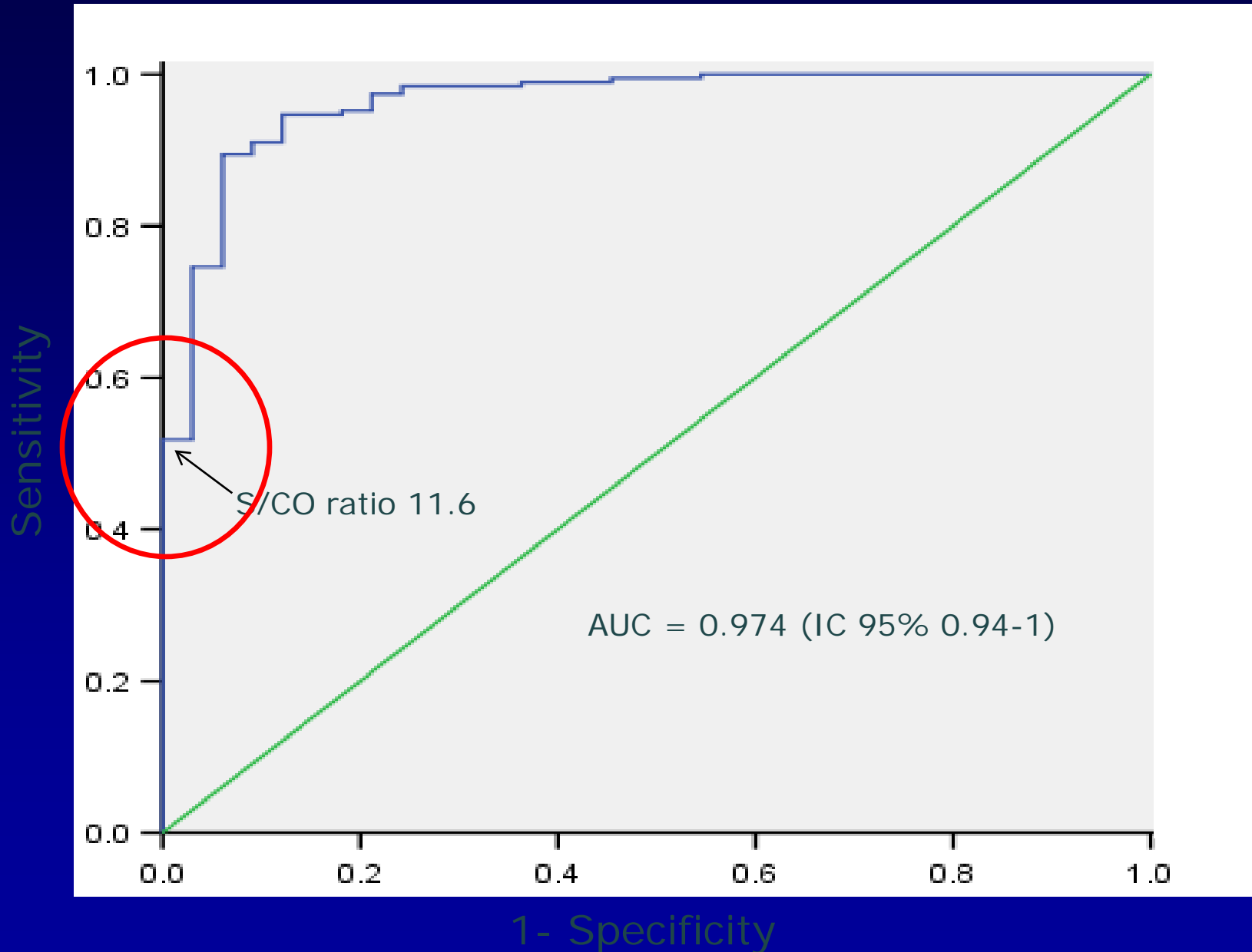
- A positive WB test by CDC's criteria
or
- HIV-1 RNA \geq 2000 copies/ml

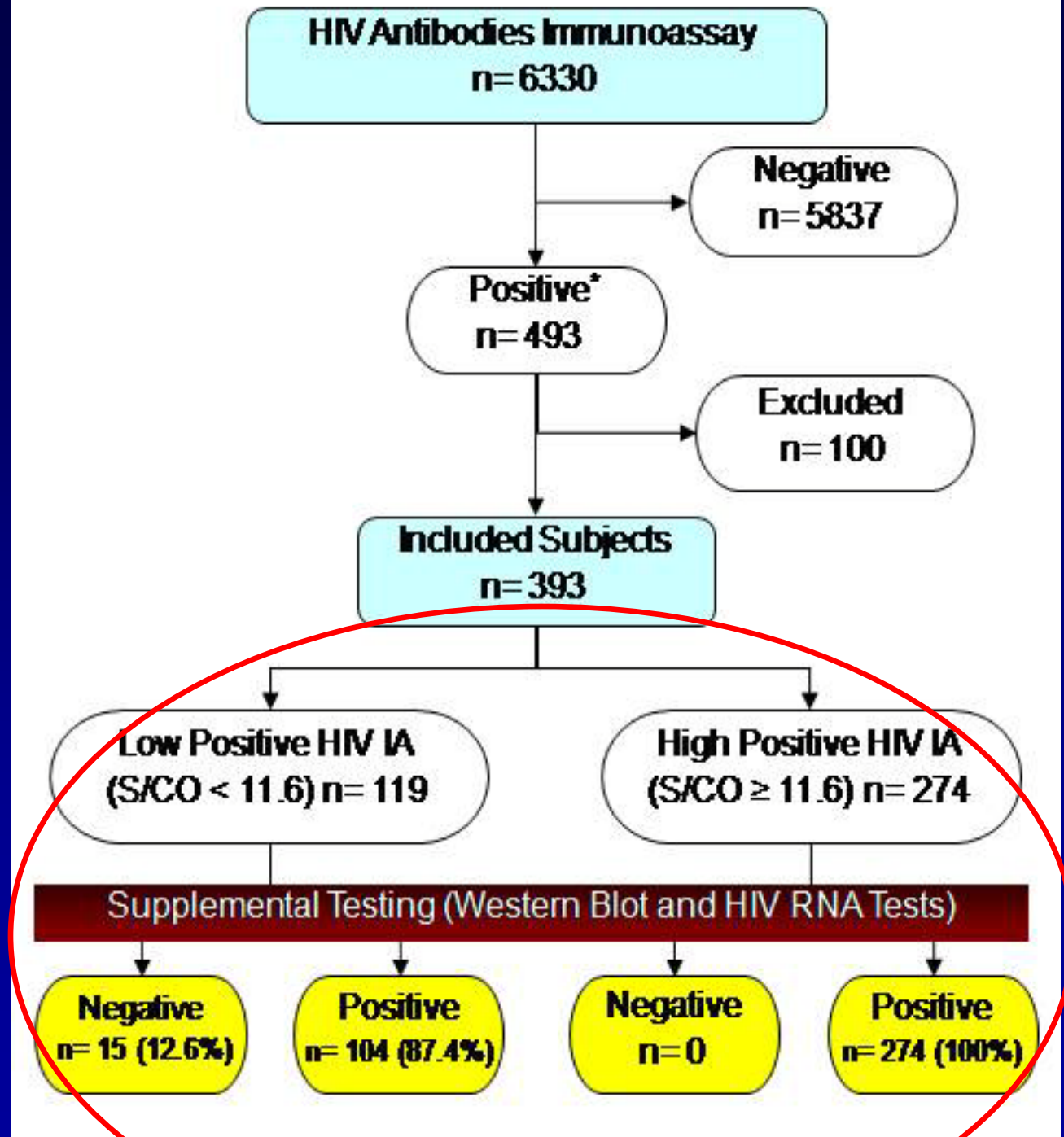
- Indeterminate WB result without HIV RNA test were considered as false-positive (or non confirmed)

Results



Receiver Operator Characteristics

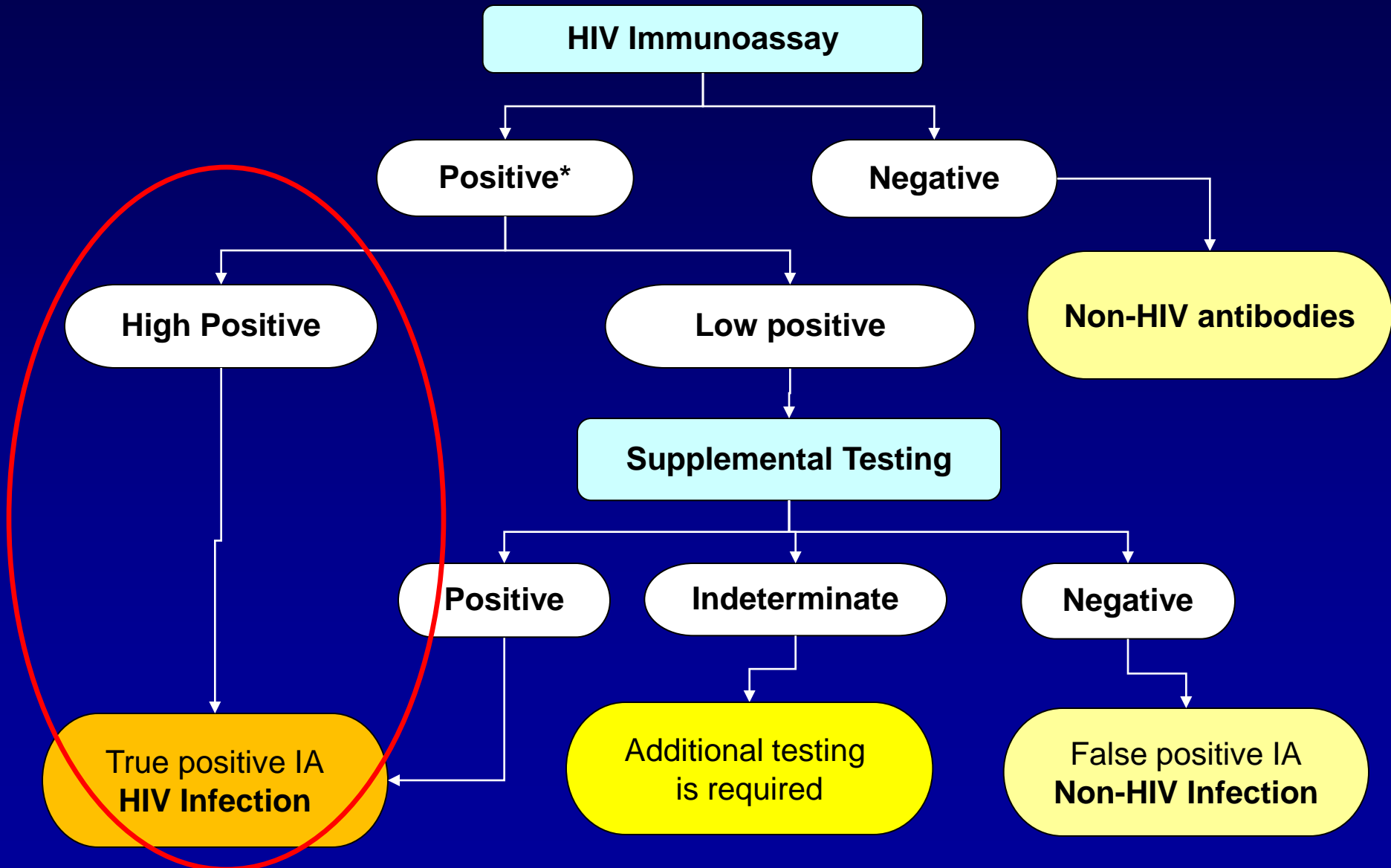




Comparison of Two Different cutoffs of HIV IA

	S/CO ratio > 3.0	S/CO ratio \geq 11.6
Sensitivity, % (95%CI)	99.7 (99.2-100)	72.5 (68.1-76.9)
Specificity, % (95%CI)	46.7 (41.8- 51.6)	100.0 (98.9-100)
PPV, % (95%CI)	97.9 (96.5-99.3)	100.0 (98.9-100)
NPV, % (95%CI)	87.5 (84.3-90.7)	12.6 (9.8-15.3)
+ Likelihood Ratio	1.9	72.5
- Likelihood Ratio	0.06	0.27

Proposal of a Diagnostic Algorithm Including the High Positive HIV IA Result



Conclusions

- A high positive HIV IA may confirm HIV-1 Infection (high prevalence population)
- Quantitative assessment of HIV IA
 - No additional efforts
 - May shortens required time for HIV confirmation
 - Avoids the need of unnecessary supplemental tests
- These findings warrant further research
 - Others HIV immunoassays
 - Other populations



www.com...
S
Seguridad?
¿estamos la

STRO