

Value-added reporting

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COMMUNICATING DIAGNOSTIC ACCURACY

Communicating diagnostic accuracy

Question 1

- Sensitivity: 95%
- Specificity: 90%
- Pre-test probability: 2.5%
- Post-test probability ???

- 10%
- 20%
- 50%
- 80%
- 90%

Communicating diagnostic accuracy

Question 1

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- Specificity: 90%
- Pre-test probability: 2.5%
- Post-test probability ???

- 10%
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Communicating diagnostic accuracy

Question 1

- Sensitivity: 95%
- Specificity: 90%
- Pre-test probability: 2.5%
- Post-test probability ???

- 10%
- **20% (9% of respondents)**
- 50%
- 80%
- **90%**

Communicating diagnostic accuracy

Question 2

- LR 10

A pos test result occurs 10 times more frequently in patients with the disease compared to patients without the disease

- Pre-test probability: 2.5%

- 10%
- 20%
- 50%
- 80%
- 90%

Communicating diagnostic accuracy

Question 2

- LR 10

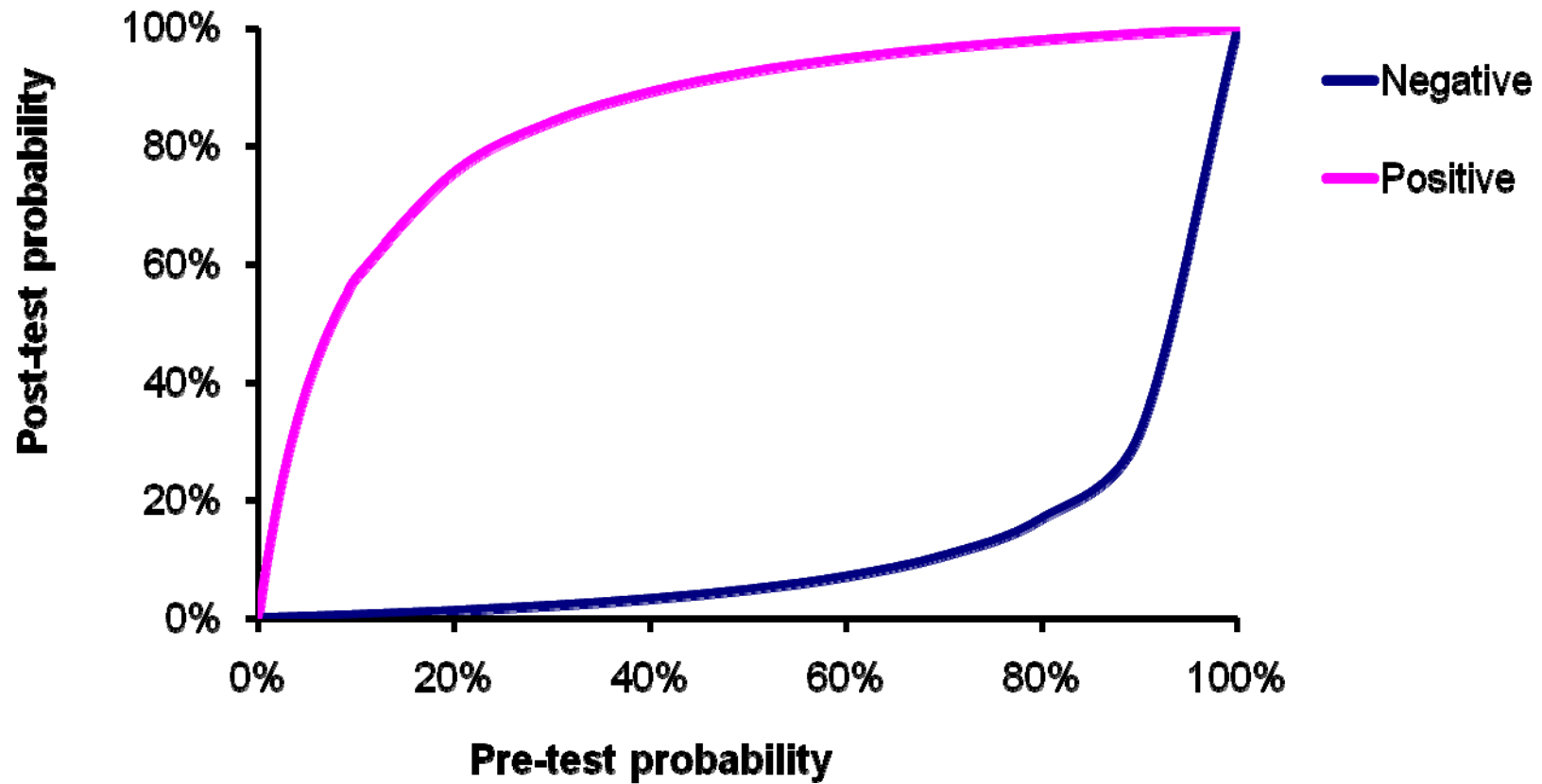
A pos test result occurs 10 times more frequently in patients with the disease compared to patients without the disease

- Pre-test probability: 2.5%

- 10%
- **20% (35% of respondents)**
- 50%
- 80%
- 90%

Communicating diagnostic accuracy

- Question 3



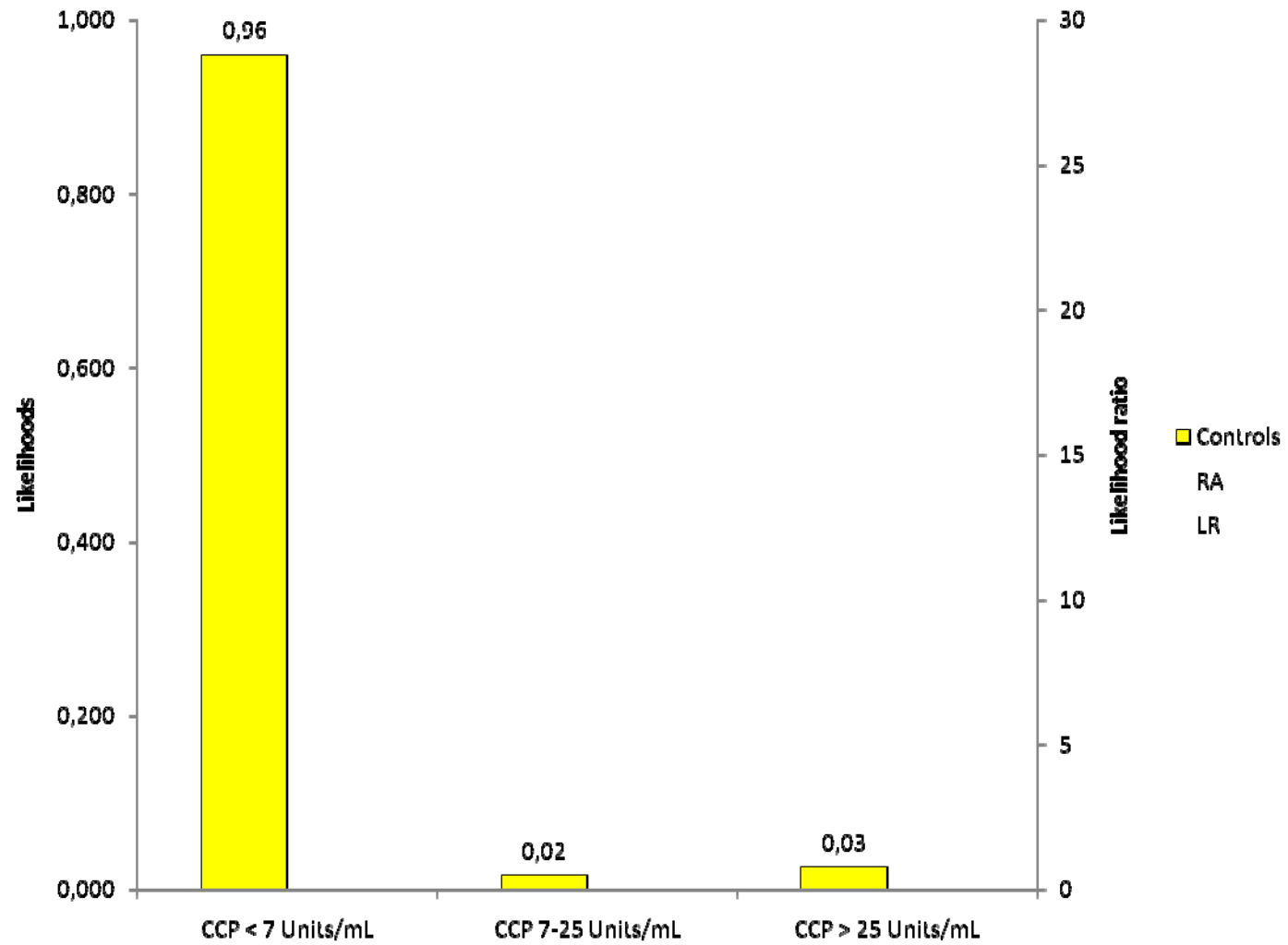
RHEUMATOID ARTHRITIS

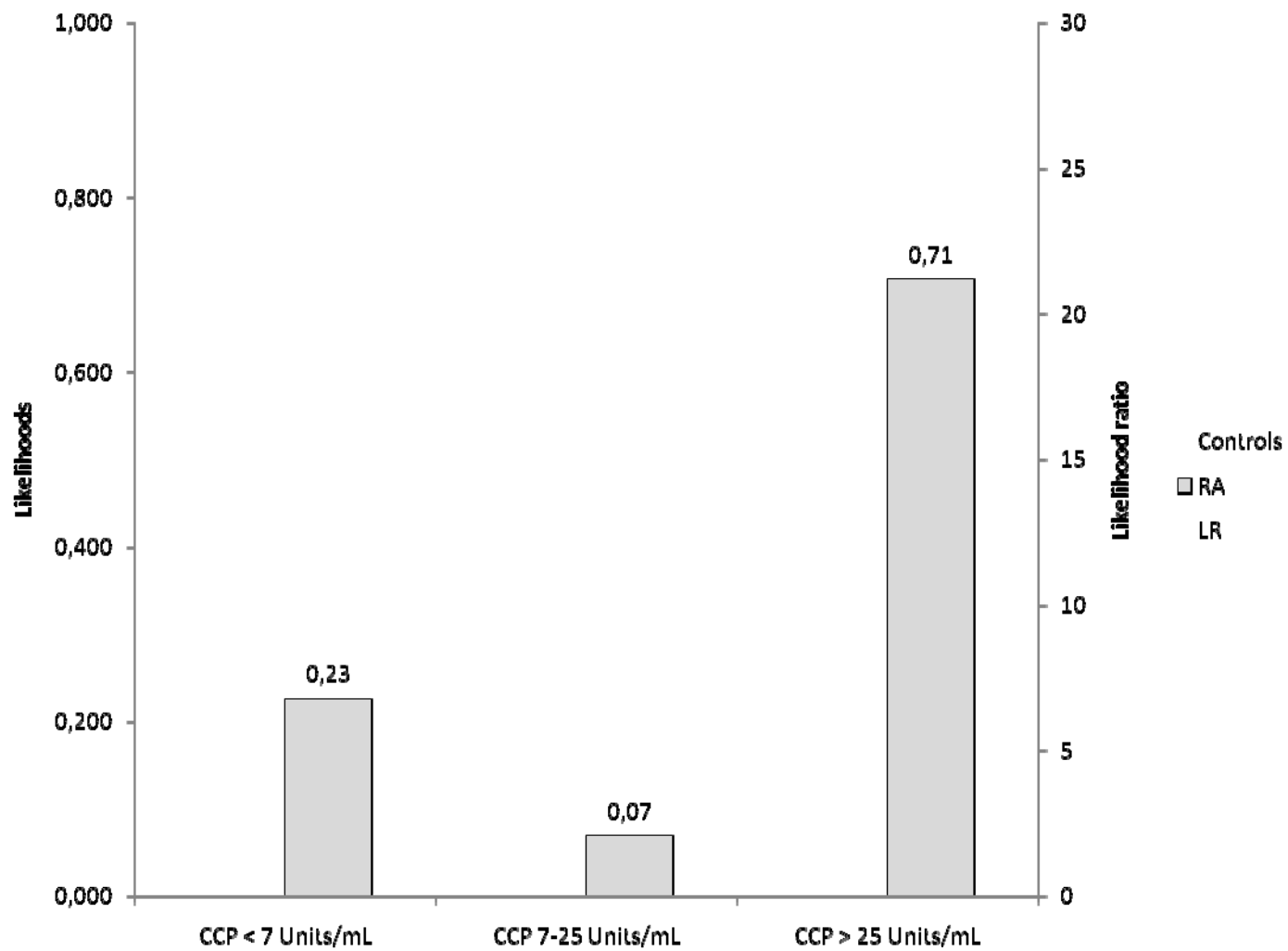
Anti-CCP

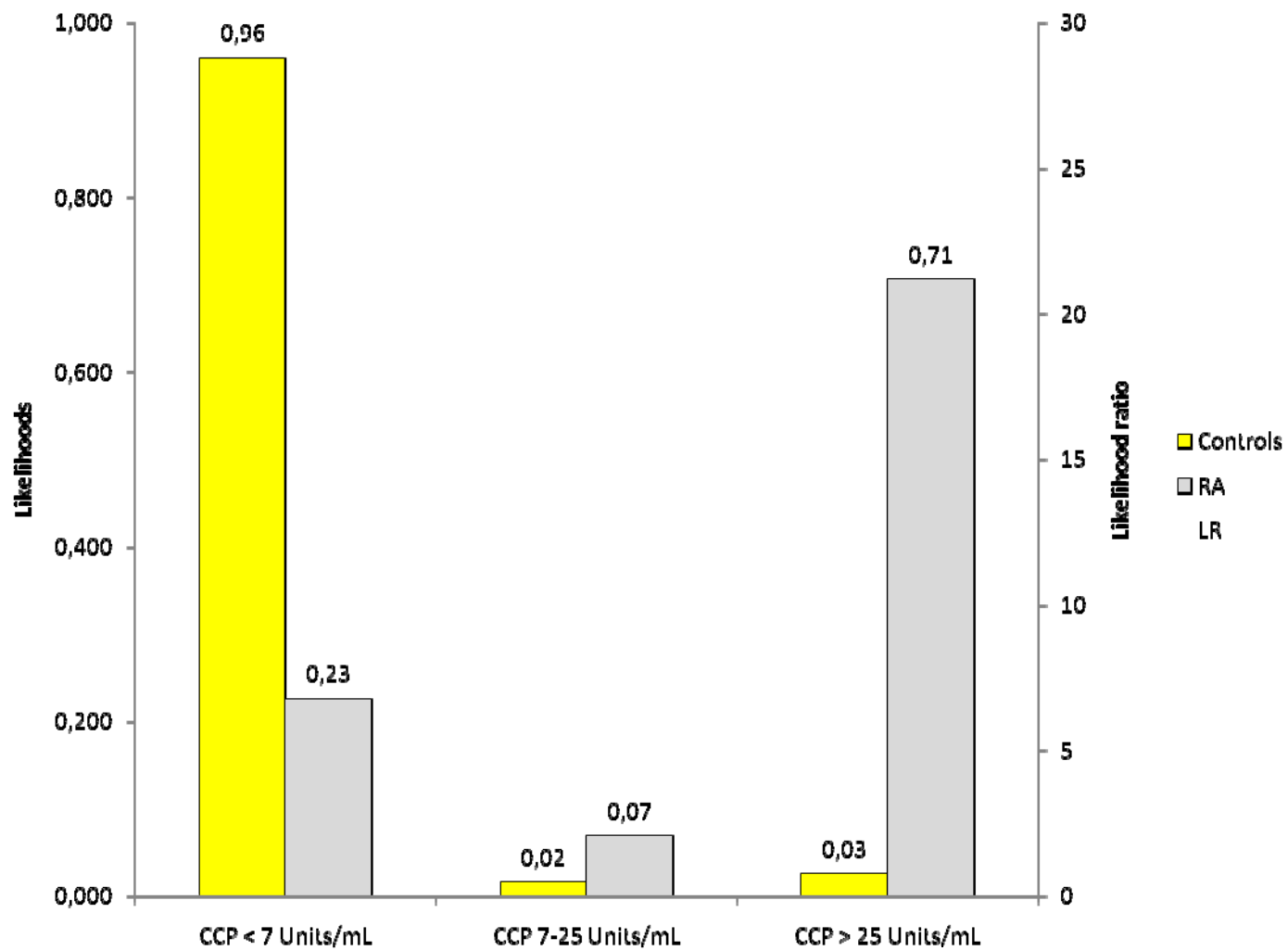
298 patients

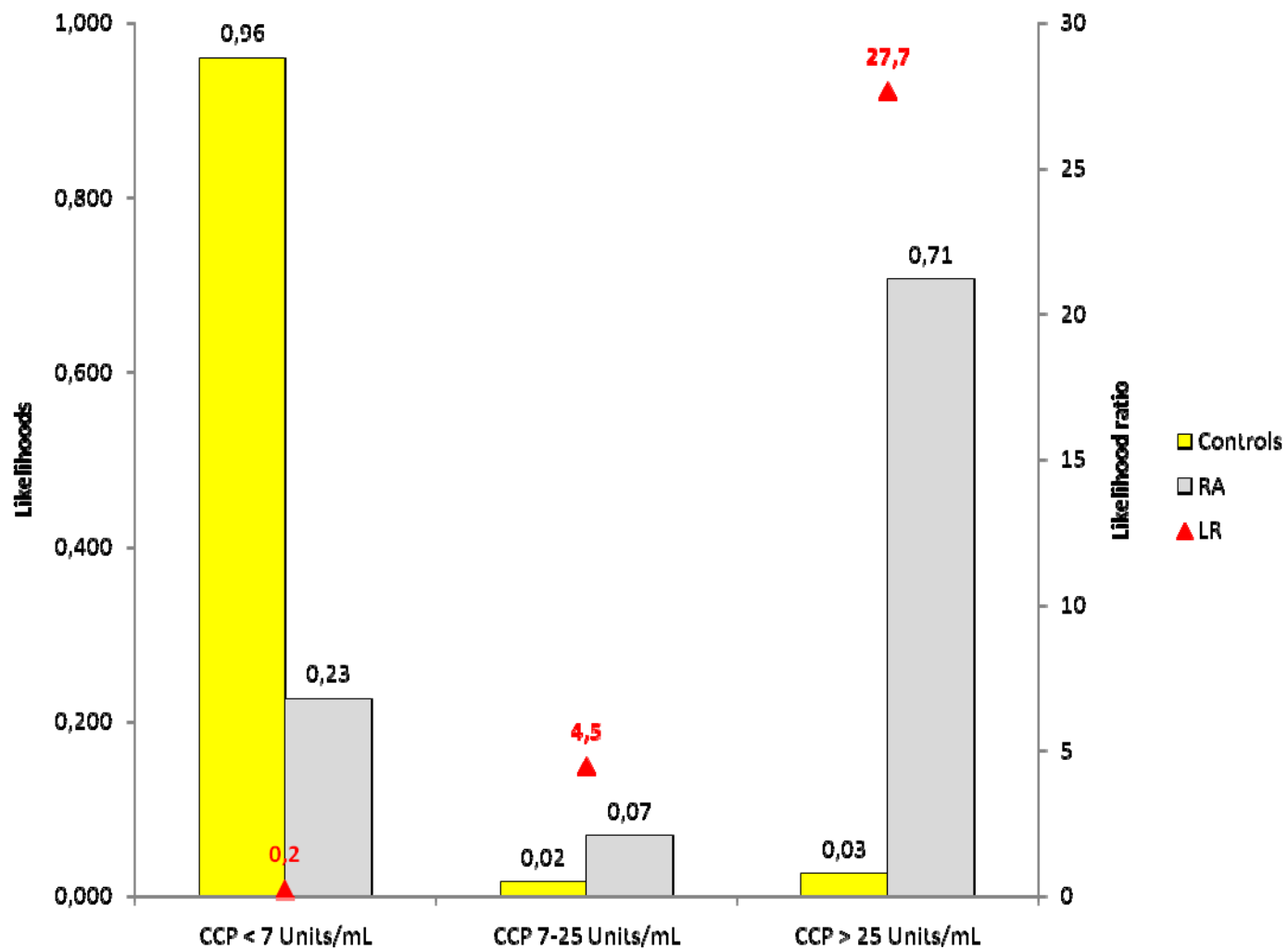
- RA patients (n=85)
 - 45 early RA
 - 40 established RA
- Diseased controls (n=165), including:
 - Psoriatic arthritis
 - Connective tissue disease
 - Organ-specific autoimmune disease
- Consecutive patients (n=48)
 - 16 RA

- Anti-CCP: Phadia (7Units/mL)
- RF: nephelometry, Immage, Beckman-Coulter (20 IU/mL)









LR

1

no clinical value

>10

<0.1

clinically important difference

5 – 10

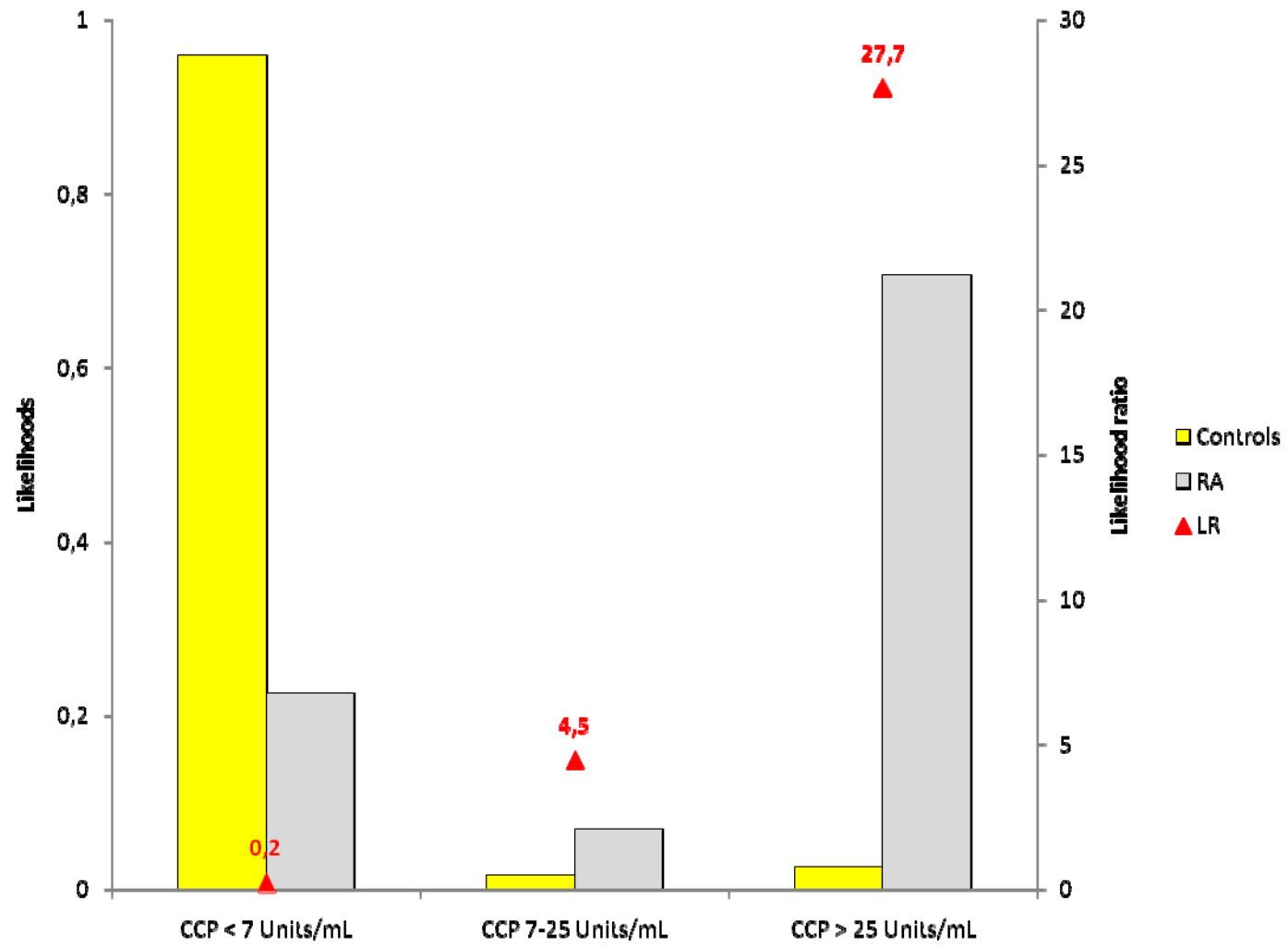
0.1 – 0.2

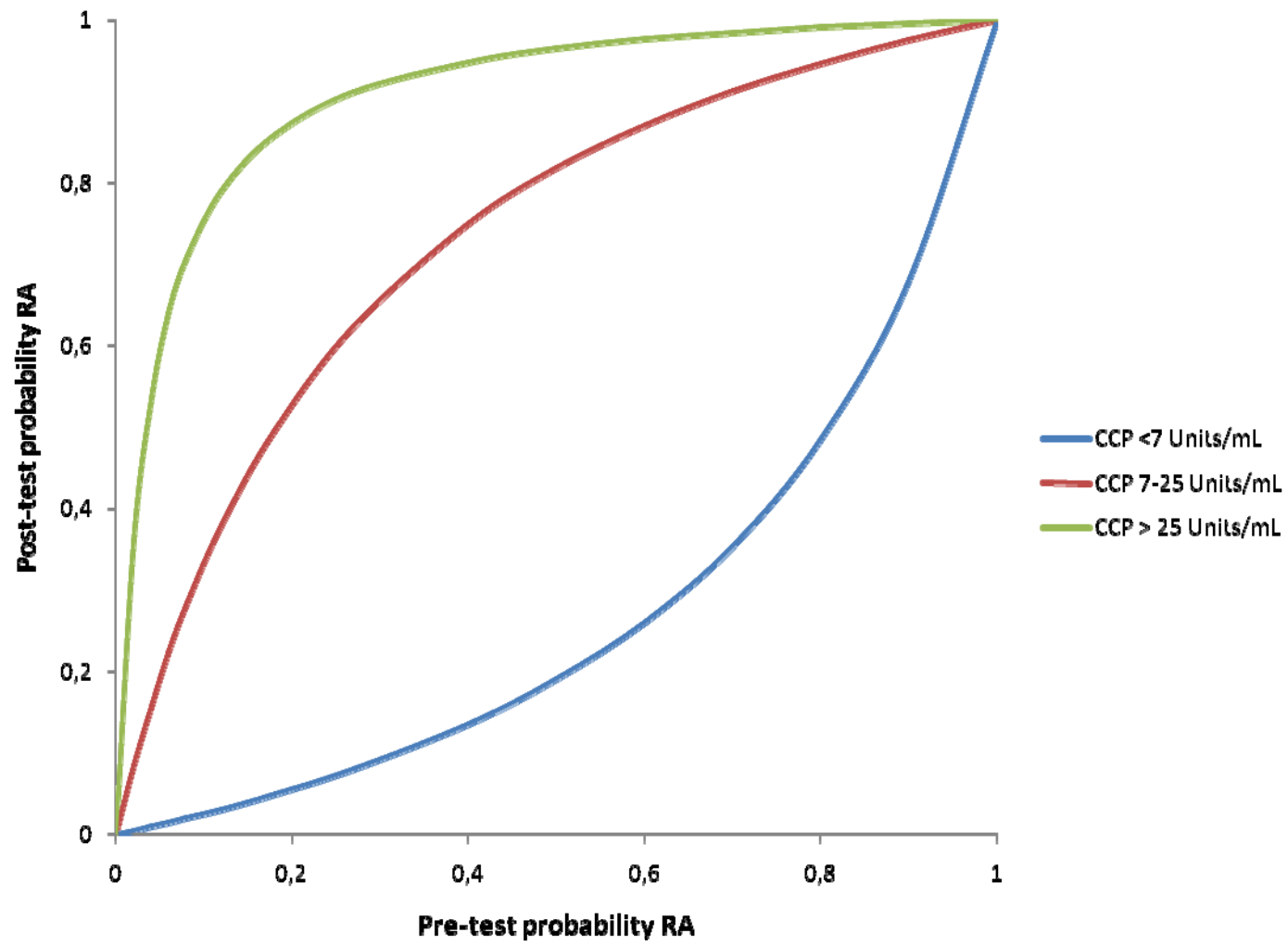
modest, but substantial difference

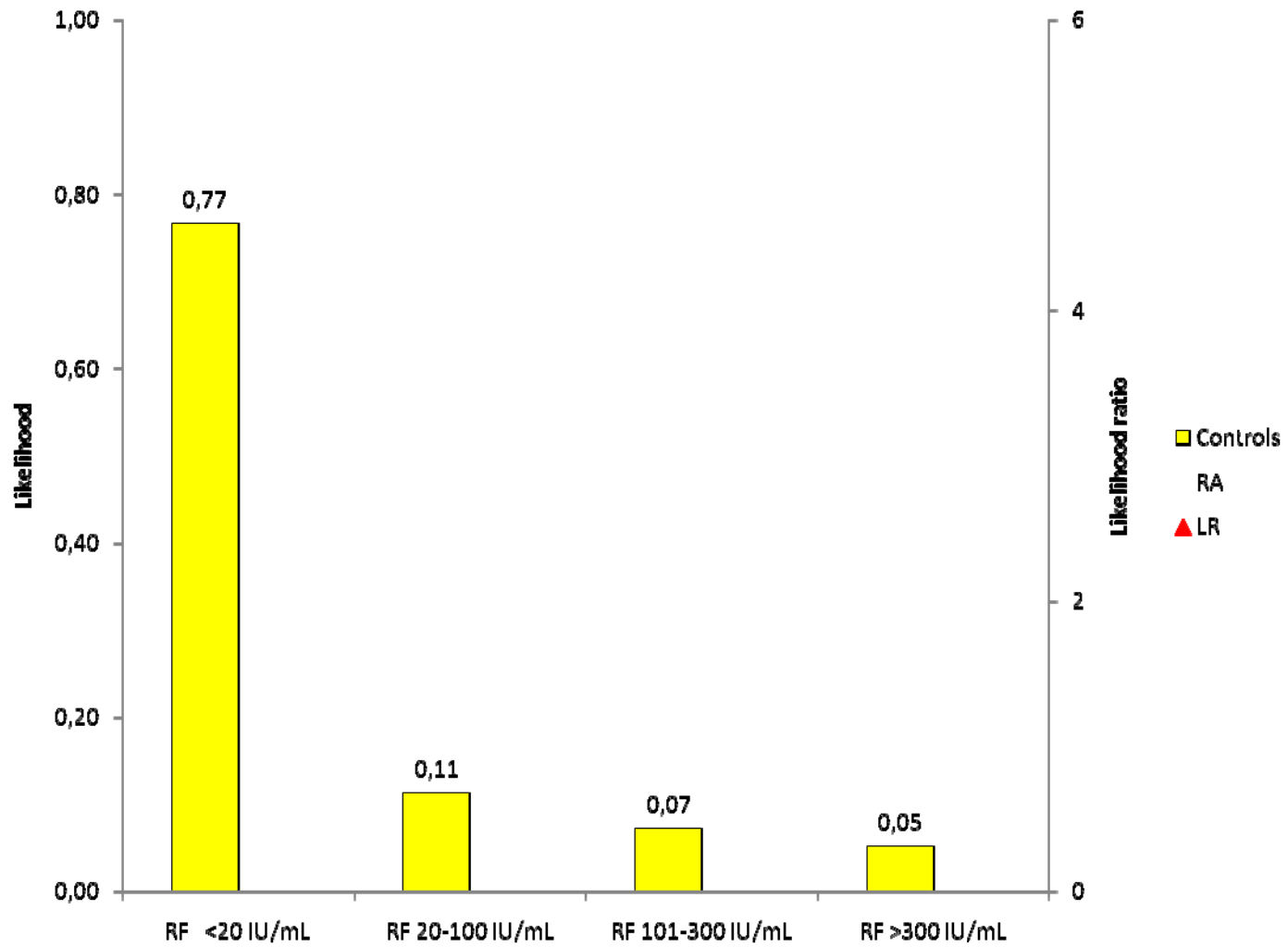
2 – 5

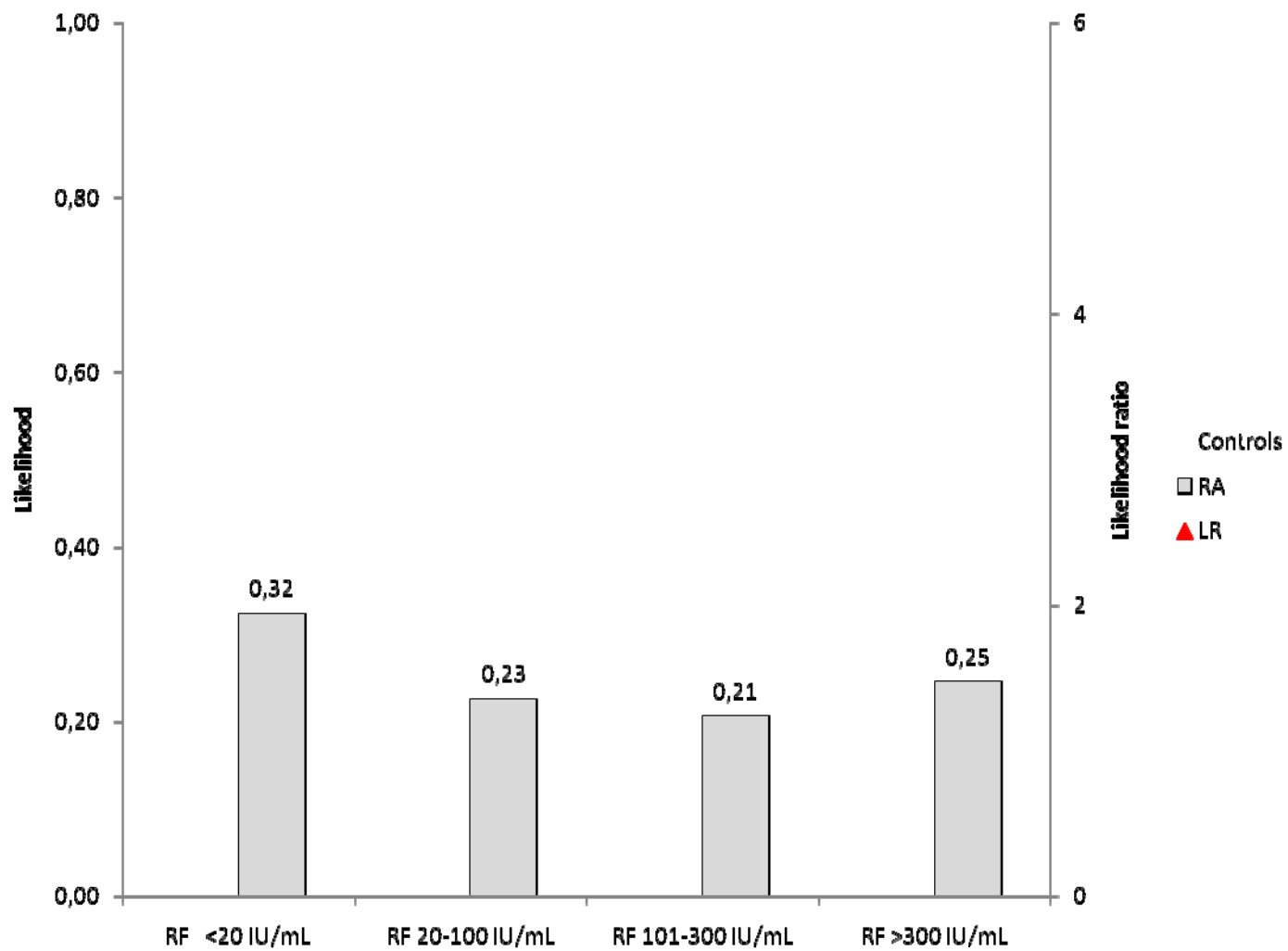
0.2 – 0.5

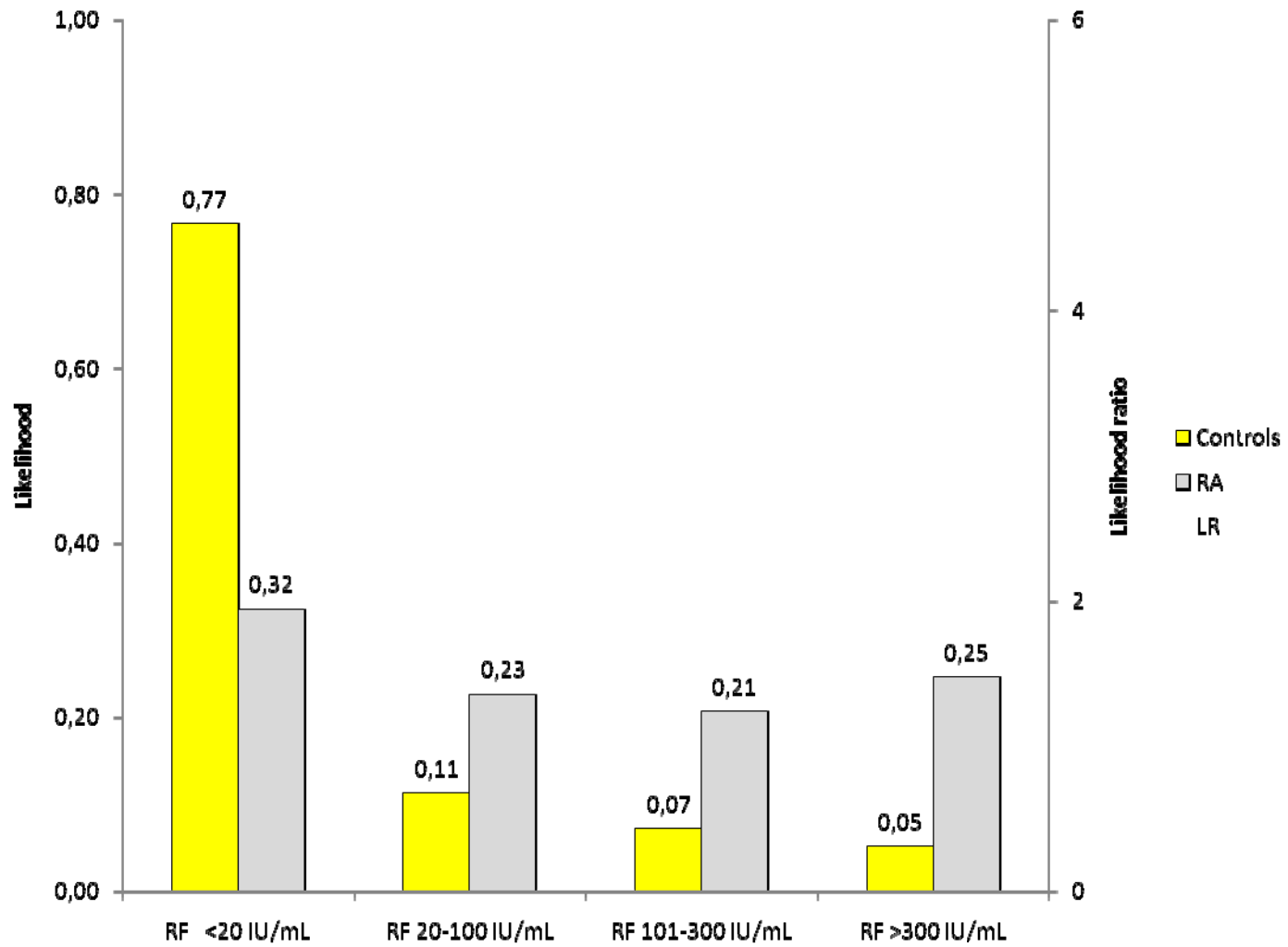
small difference that may be relevant

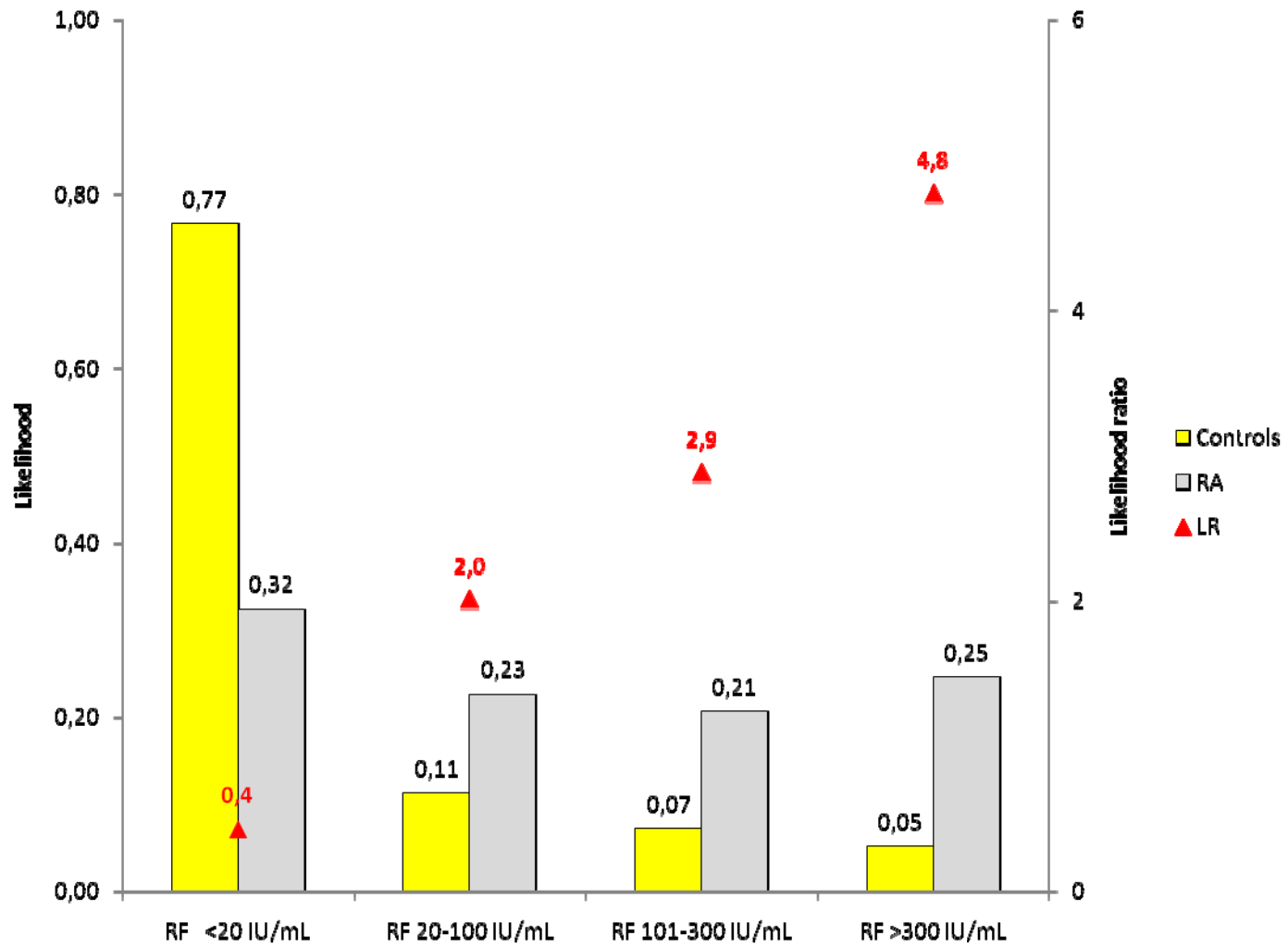


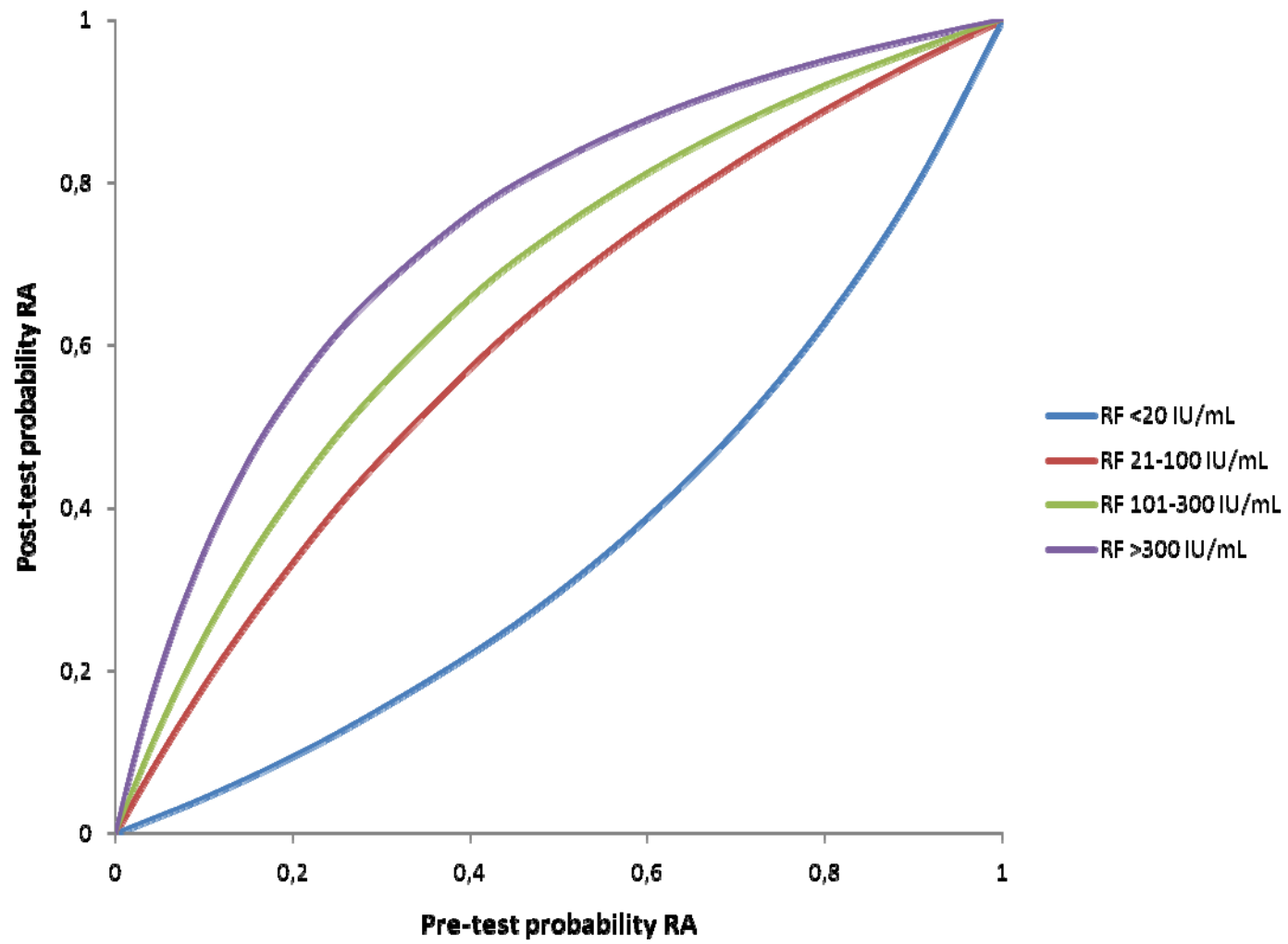


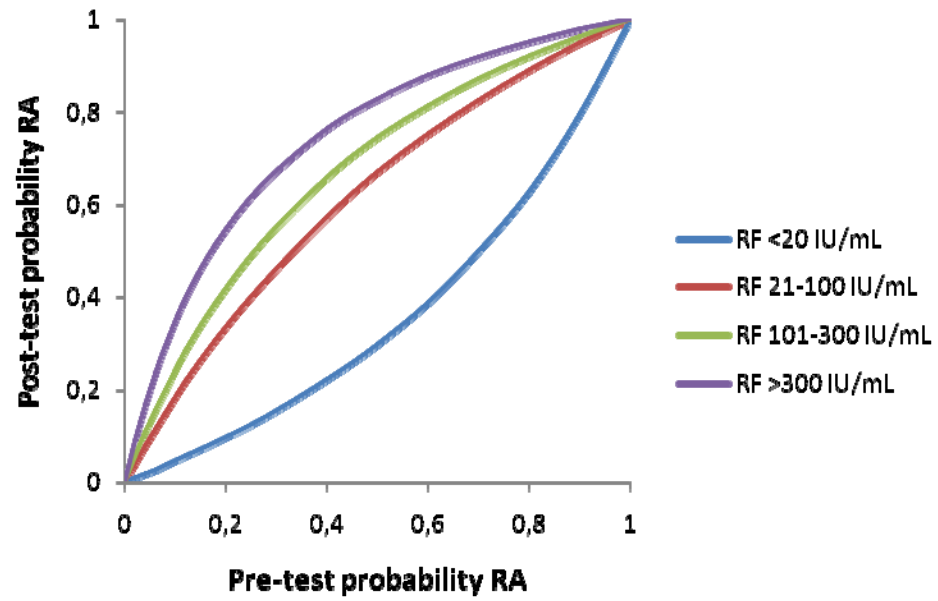
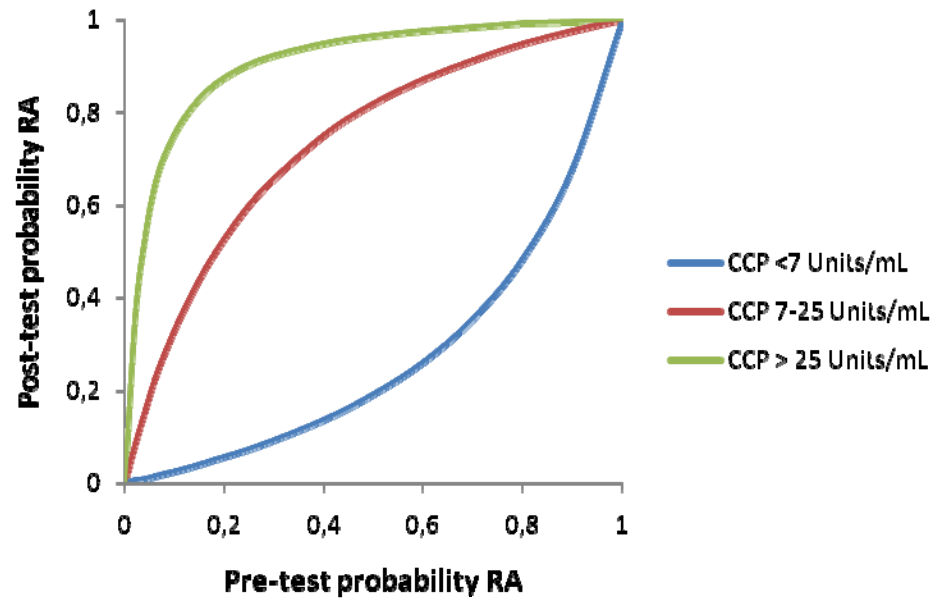


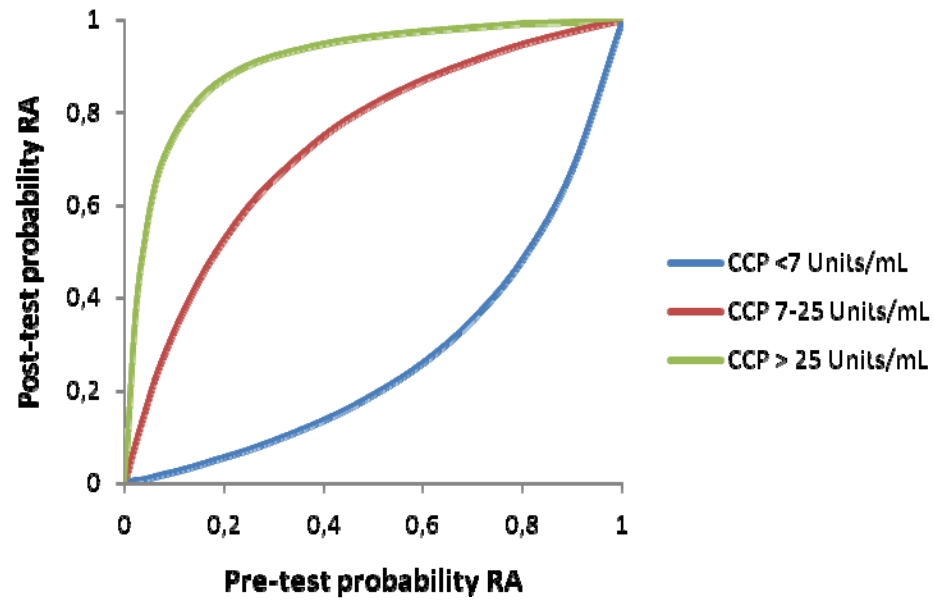




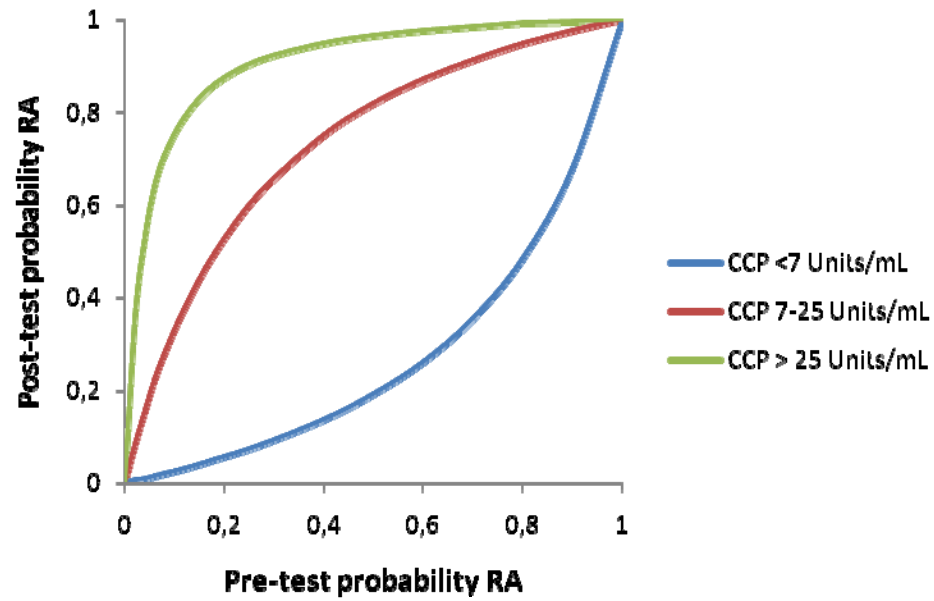








Female, 50 years old
Recent onset undifferentiated arthritis
Intermittent asymmetric tender and swollen small joints of the hands (n=5)
CRP: 10 mg/L



Female, 50 years old
Symmetric arthritis of upper and lower extremities
Tender and swollen small joints (n=12)
CRP: 70 mg/L

Diagnostic performance of anti-DGP assays

IgG anti-DGP

- 229 CD patients
- 900 diseased controls

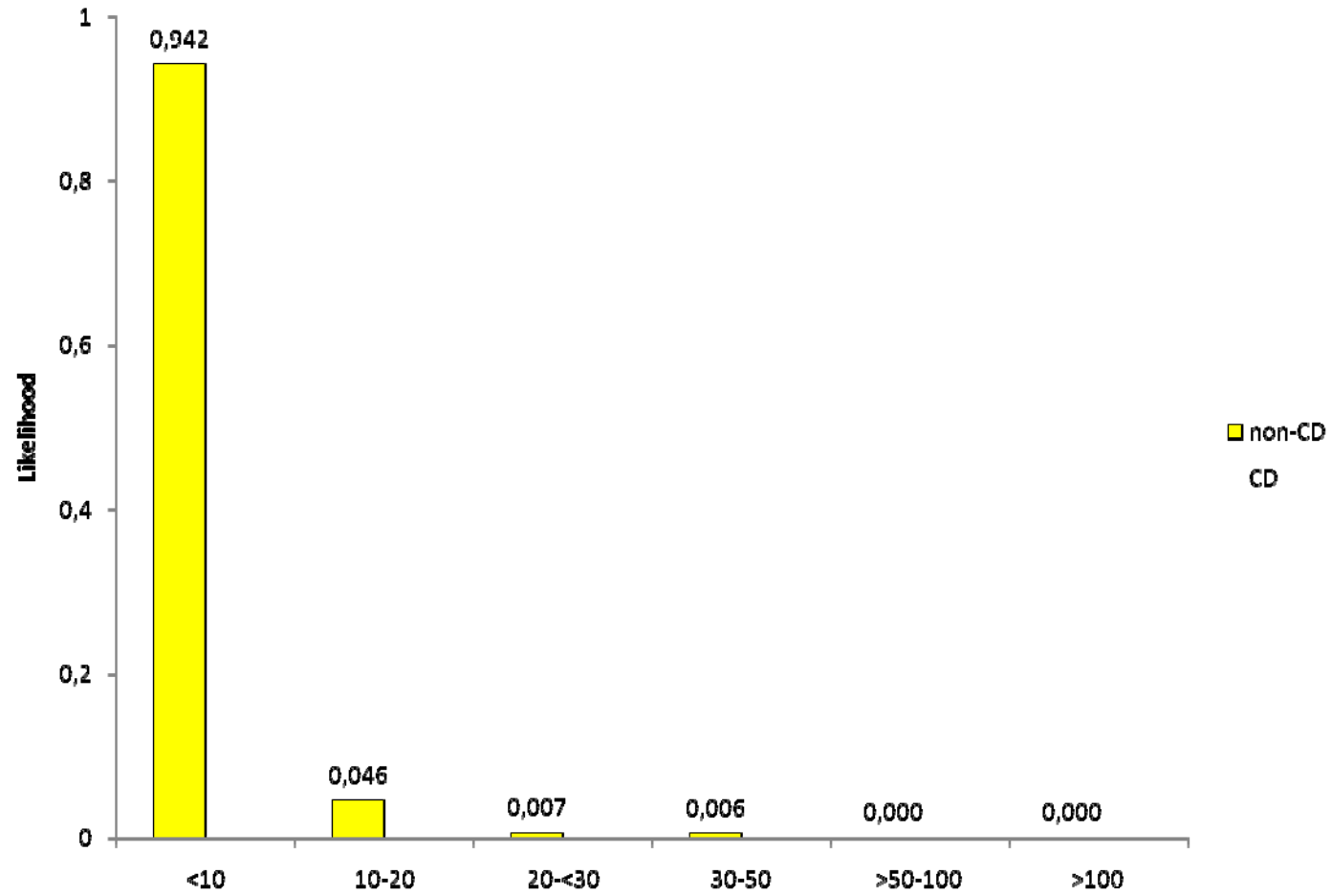
IgA anti-DGP

- 229 CD patients
- 505 diseased controls

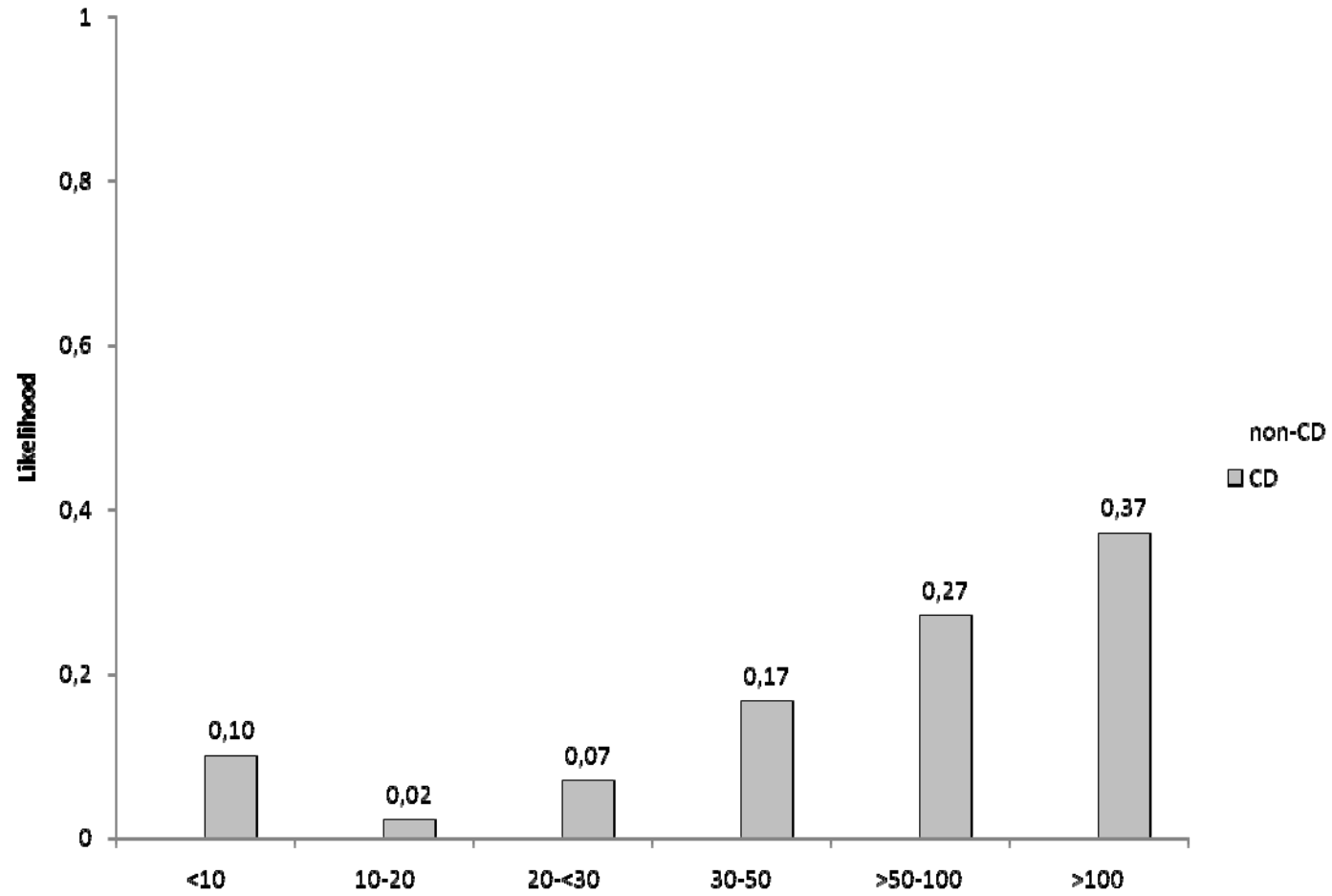
All patients and controls underwent biopsy

	sensitivity	specificity	LR
IgG anti-DGP			
Inova	87.8%	98.8%	73.2
Euroimmun	82.5%	98.9%	75
IgA anti-DGP			
Inova	84.7%	94.3%	14.8
Euroimmun	81.7%	95.4%	17.7
Screen Inova	95,6%	93.0%	13.6

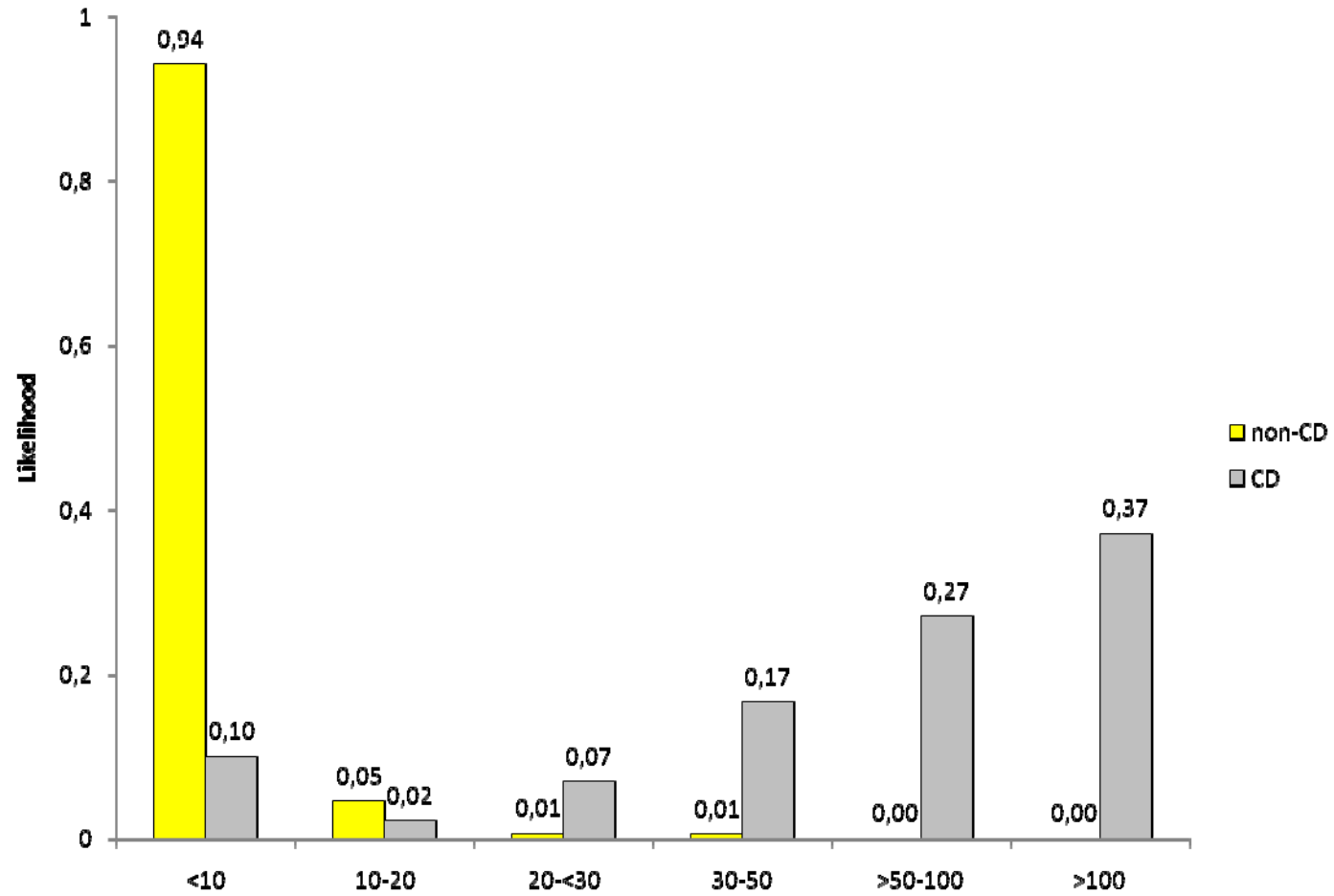
IgG DGP Inova



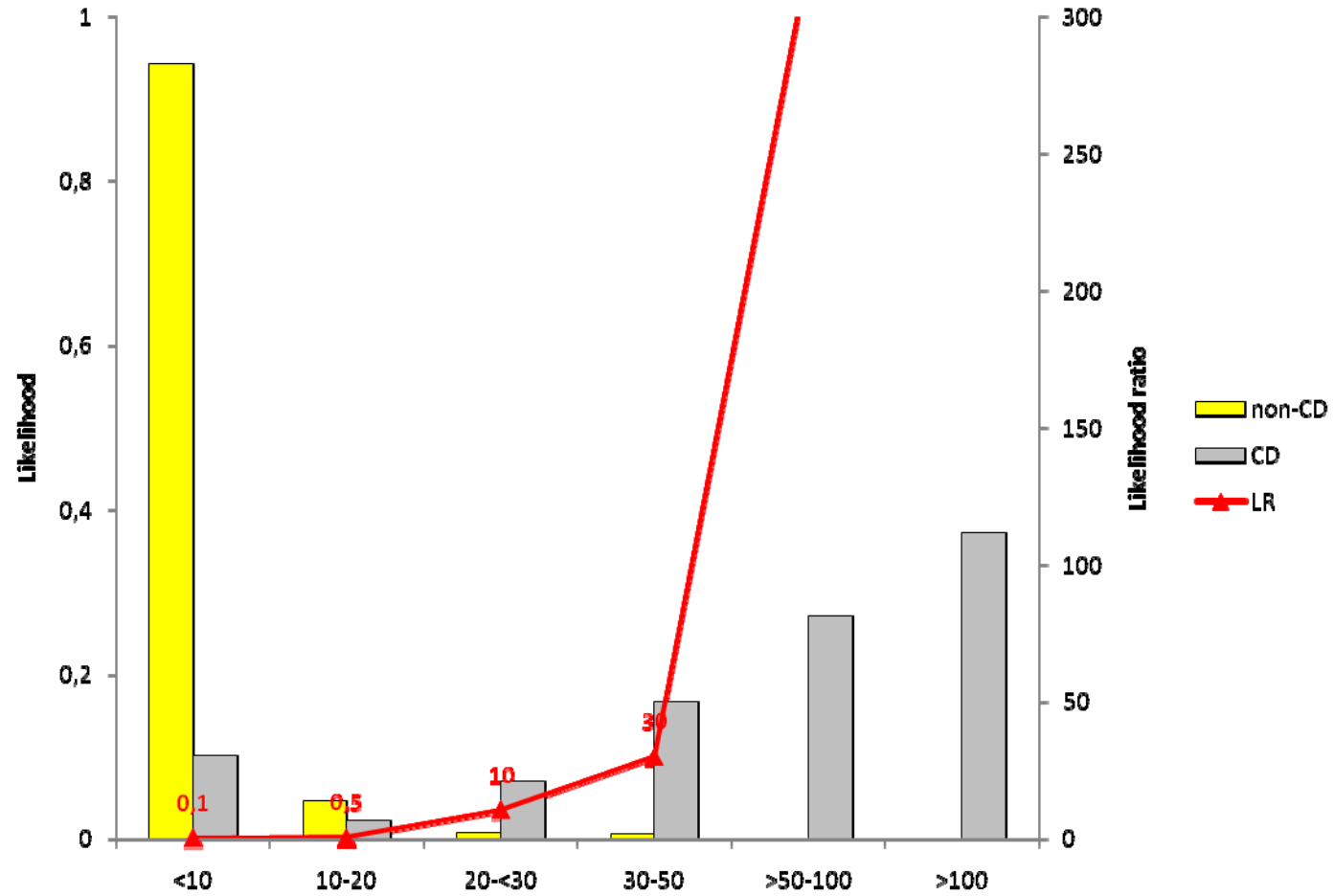
IgG DGP Inova



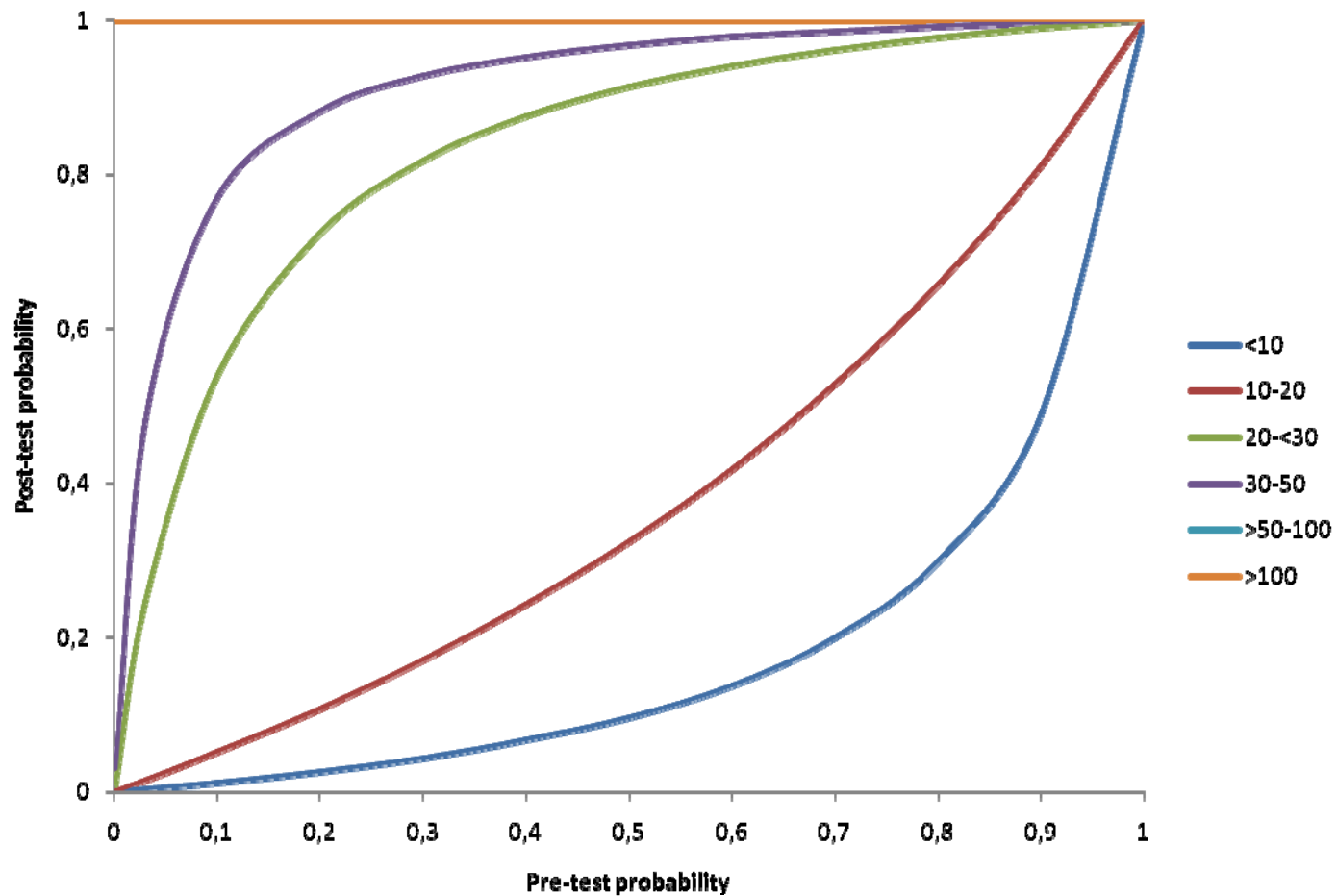
IgG DGP Inova



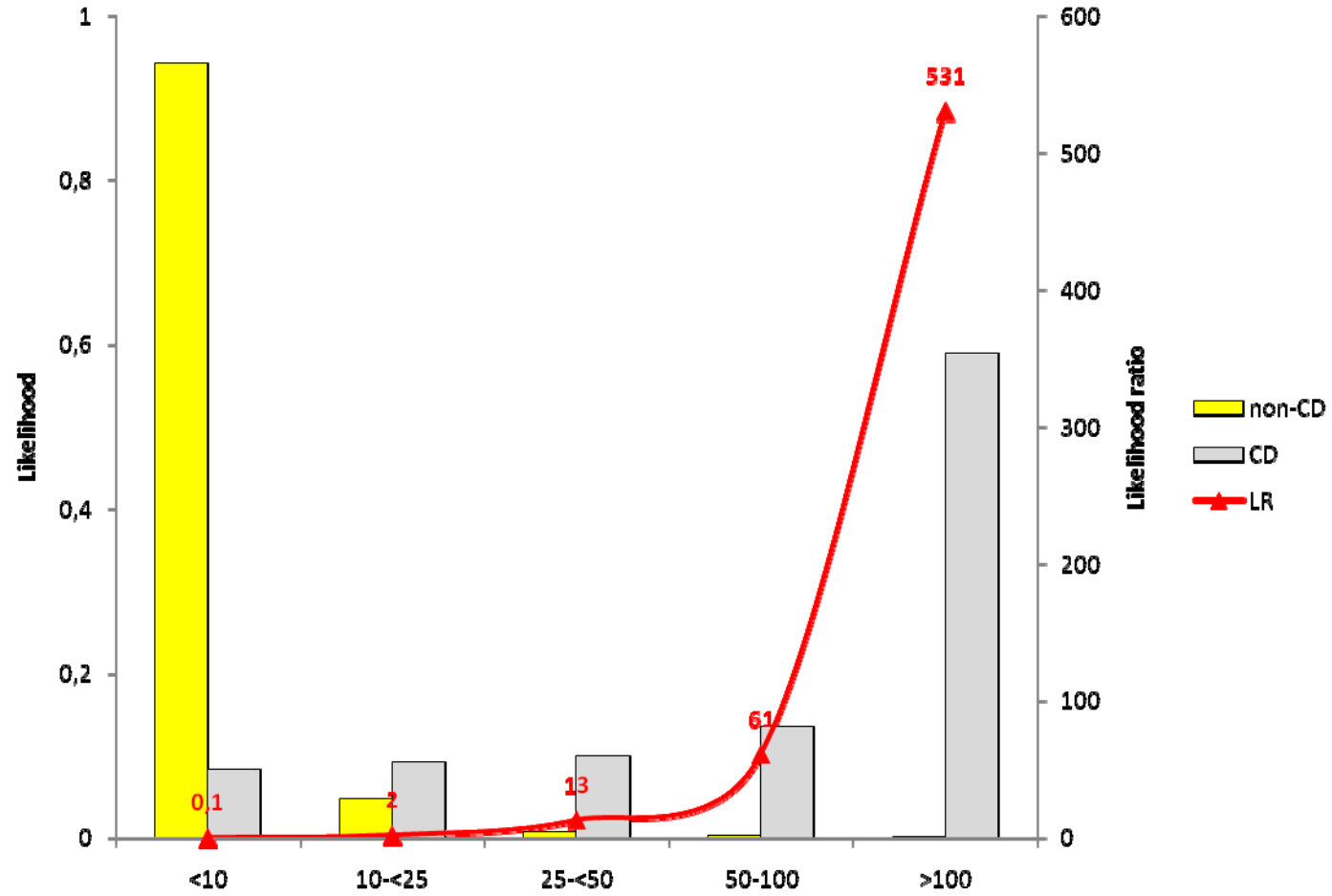
IgG DGP Inova



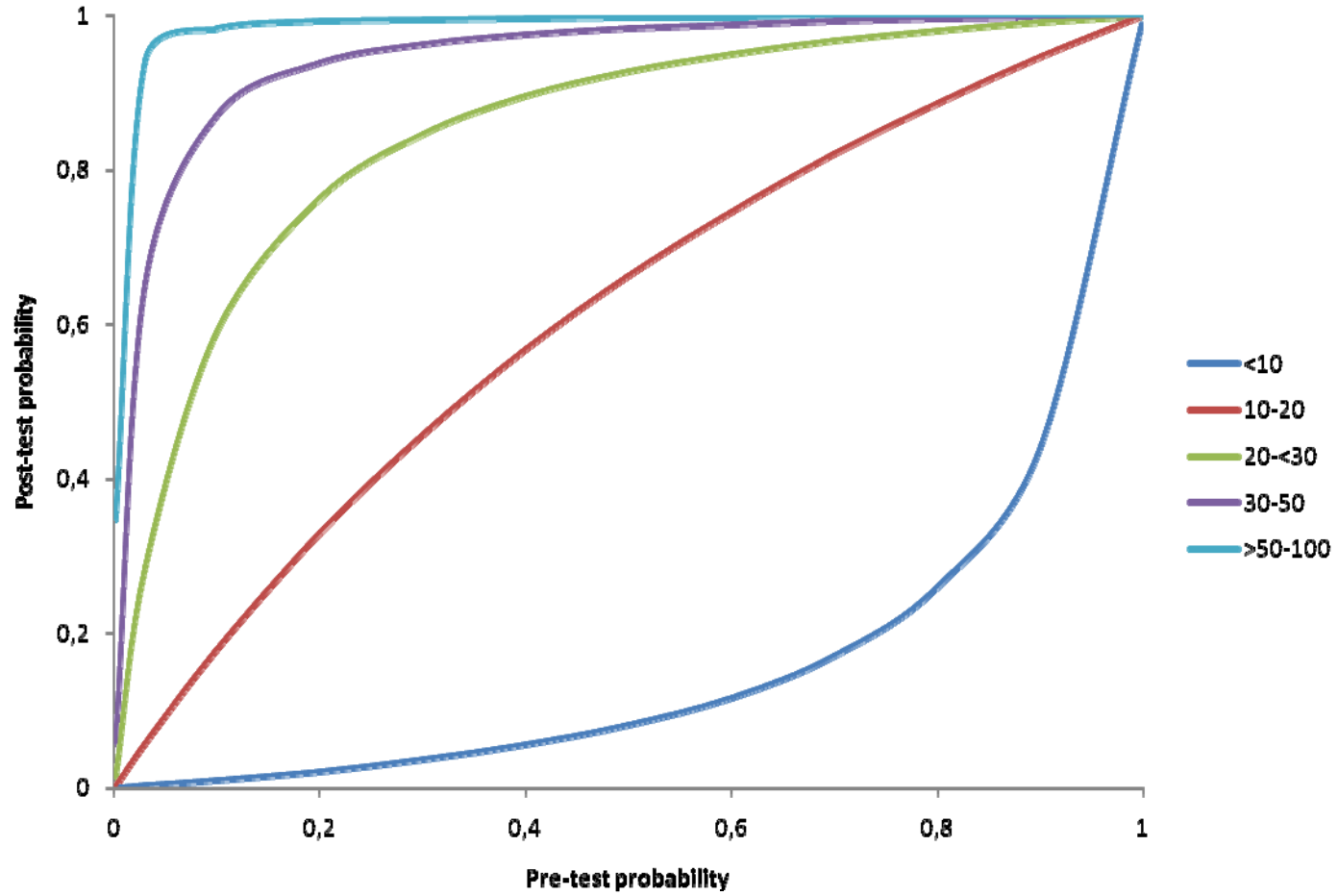
IgG DGP Inova



IgG DGP Euroimmun



IgG DGP Euroimmun



Conclusions

- We showed that a graphical representation is the best way to convey information on post-test probabilities.
- We illustrated how likelihood ratios depend on antibody level.
- Such knowledge may help with the interpretation of a specific test result.
- Clinical laboratories might consider to provide likelihoods ratios or probability data for autoantibody test result intervals.

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