

PTG douloureuse

Qu'attendre des examens complémentaires ? Biologie

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PTG douloureuse

- Problématique importante
- Plus fréquente chez les patients avec prothèse de révision
- **Situation clinique désagréable**
 - Patient insatisfait
 - Situation où il est nécessaire de « mener l'enquête »
 - Spectre de l'infection...



PTG douloureuse

- Apyrexie
- Belle cicatrice
- Pas de descellement à la radiographie

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- **Si épanchement significatif** : envisager la ponction articulaire et RDV samedi 10h16
- **Si pas d'épanchement significatif** : comment mener l'enquête ?

PTG douloureuse

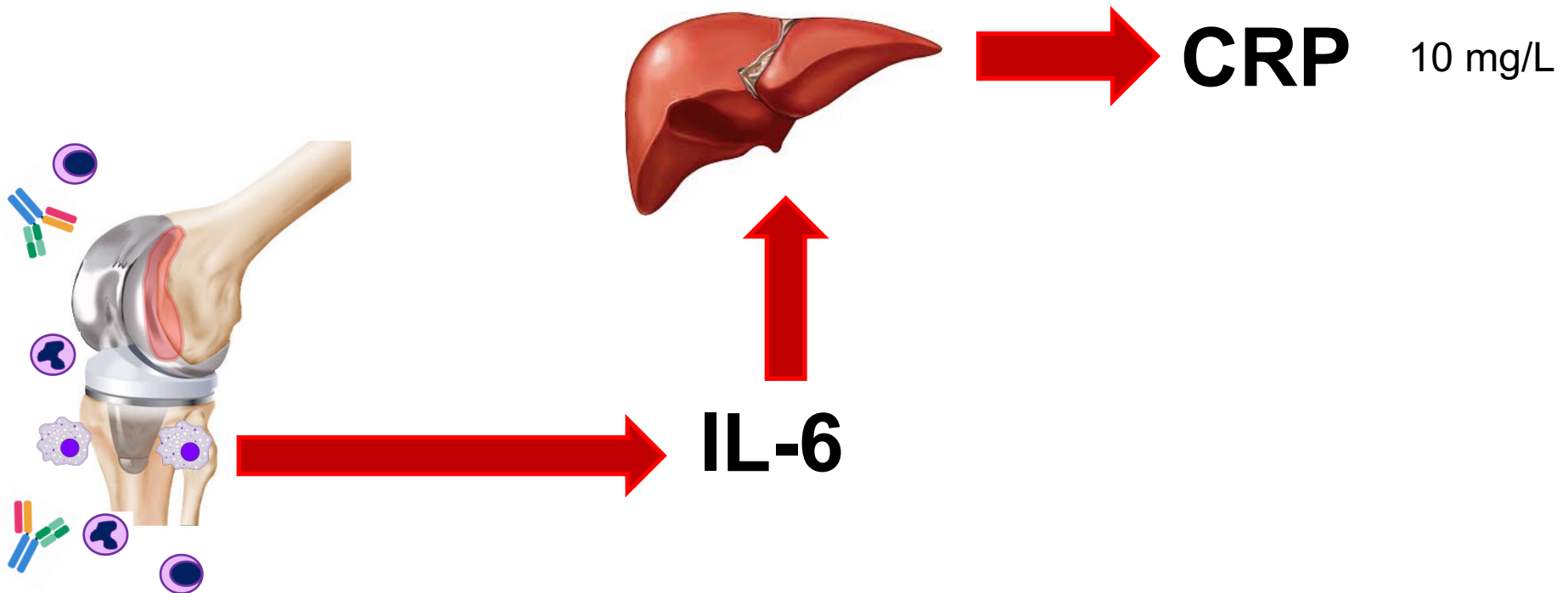
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**Qu'apporte la biologie
(sanguine) ?**



Que peut on doser ?

Cut-off



 Polynucléaires neutrophiles

 Monocytes / Macrophages

 Plasmocytes

 Anticorps

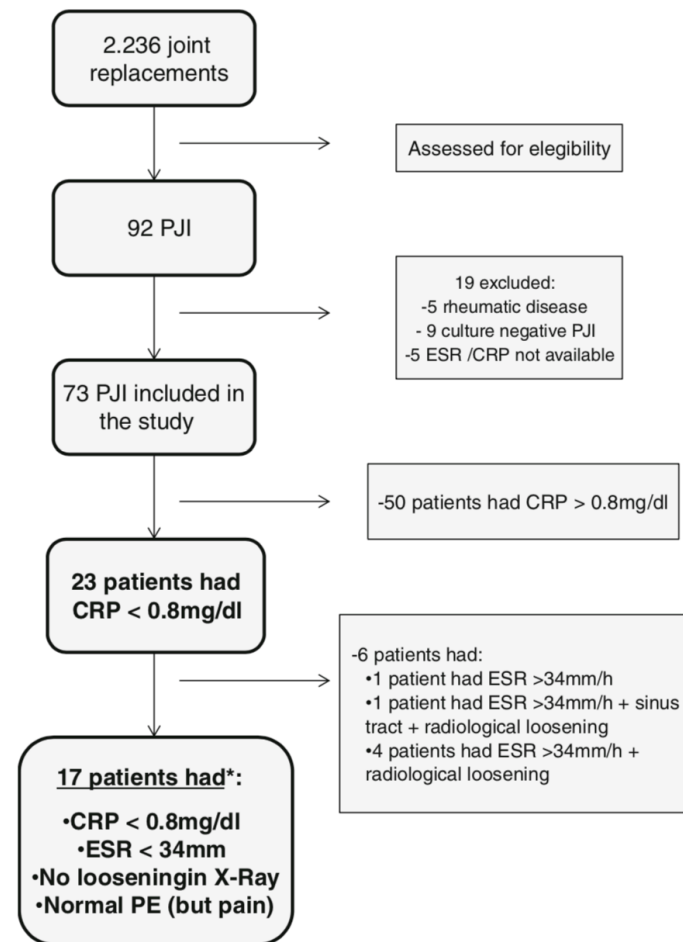
C-reactive protein may misdiagnose prosthetic joint infections, particularly chronic and low-grade infections

Daniel Pérez-Prieto^{1,2} • María E. Portillo³ • Lluís Puig-Verdié¹ • Albert Alier¹ • Santos Martínez¹ • Lluisa Sorlí⁴ • Juan P. Horcajada⁴ • Joan C. Monllau^{1,2}

18.5% des PJI = CRP normale !!!

Table 2 Type of prosthesis and microorganism of patients with normal CRP

Micro-organism	TKA	THA	Shoulder arthroplasty	Total elbow arthroplasty	Total
CNS	1	7	3 (RSA)	1	12
<i>S. aureus</i>	1	2			3
<i>P. acnes</i>		3	1 (S-HA)		4
Gram negative bacteria		1	1 (S-HA)		2
<i>S. dysgalactiae</i>			1 (RSA)		1
<i>C. albicans</i>		1			1
Total	2	14	6	1	23



Inflammatory Blood Laboratory Levels as Markers of Prosthetic Joint Infection

A Systematic Review and Meta-Analysis

By Elie Berbari, MD, Tad Mabry, MD, Geoffrey Tsaras, MD, Mark Spangehl, MD, Pat J. Erwin, MLS, Mohammad Hassan Murad, MD, James Steckelberg, MD, and Douglas Osmon, MD

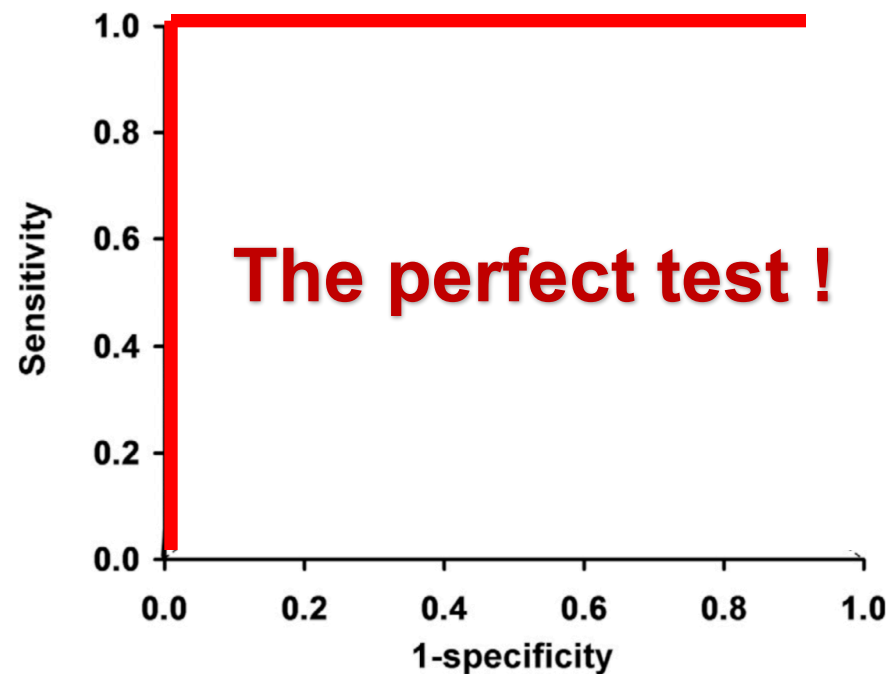
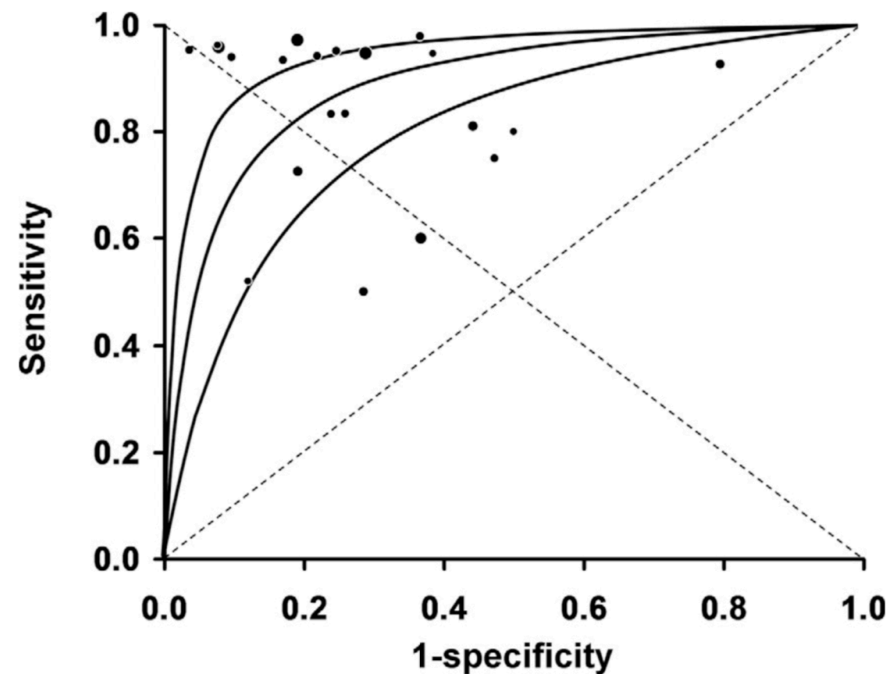


Fig. 2

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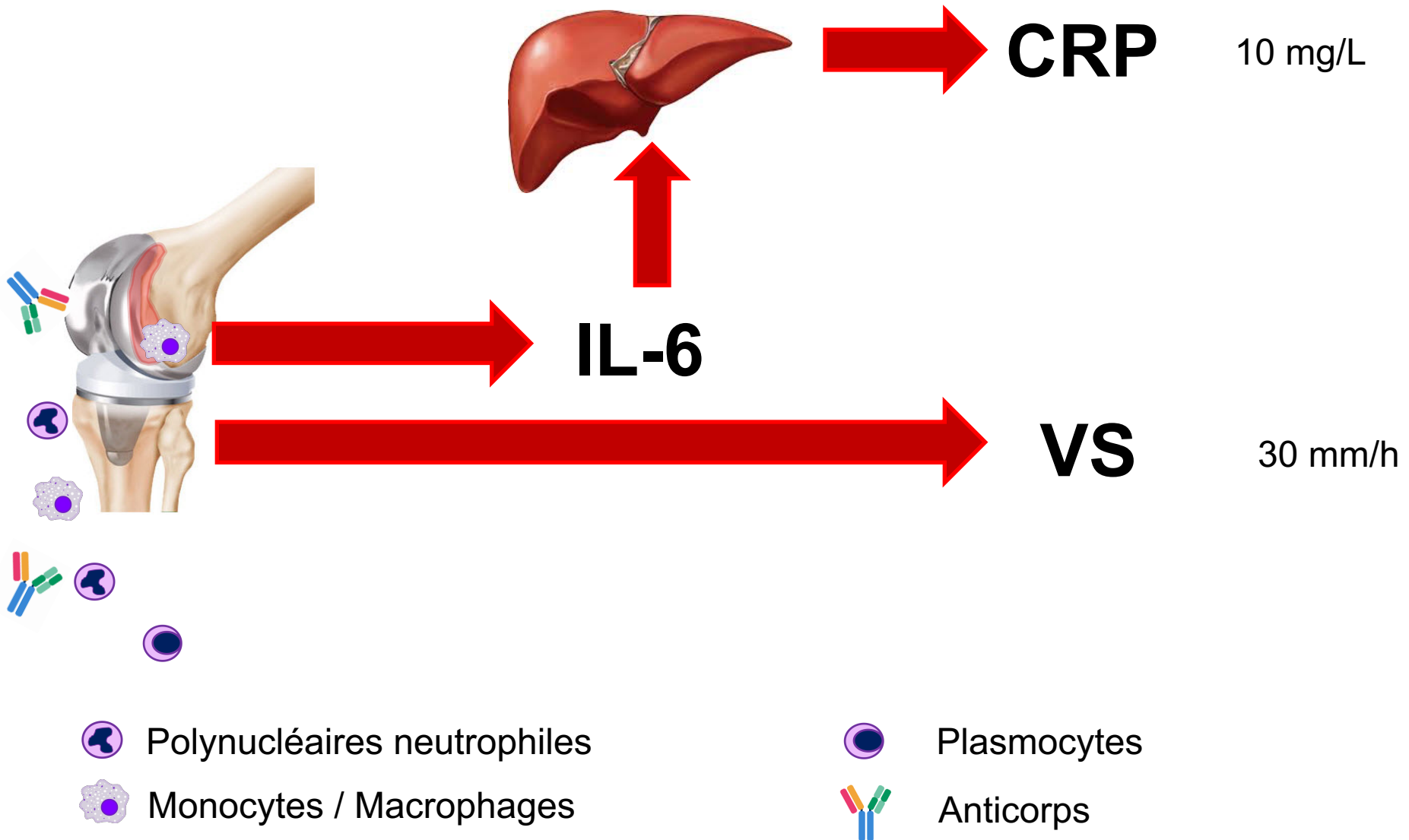
Clinical
Studies
N=23

Fig. 2

Summary receiver operator characteristic curve (with 95% confidence interval) of all included studies that assessed C-reactive protein level as a diagnostic marker for prosthetic joint infection.

Que peut on doser ?

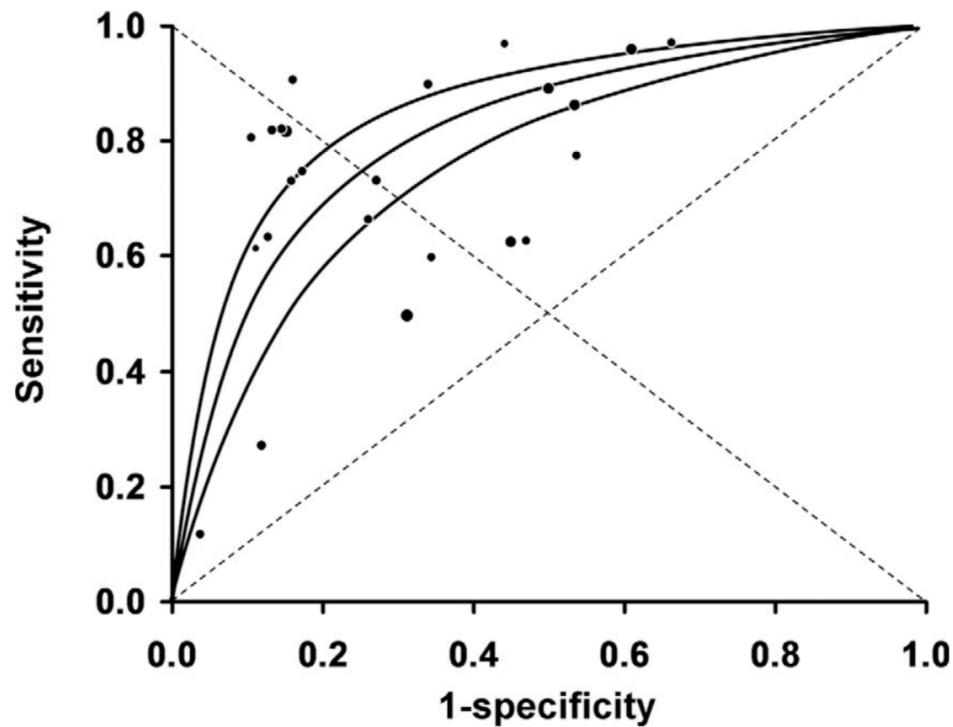
Cut-off



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Clinical
Studies
N=25

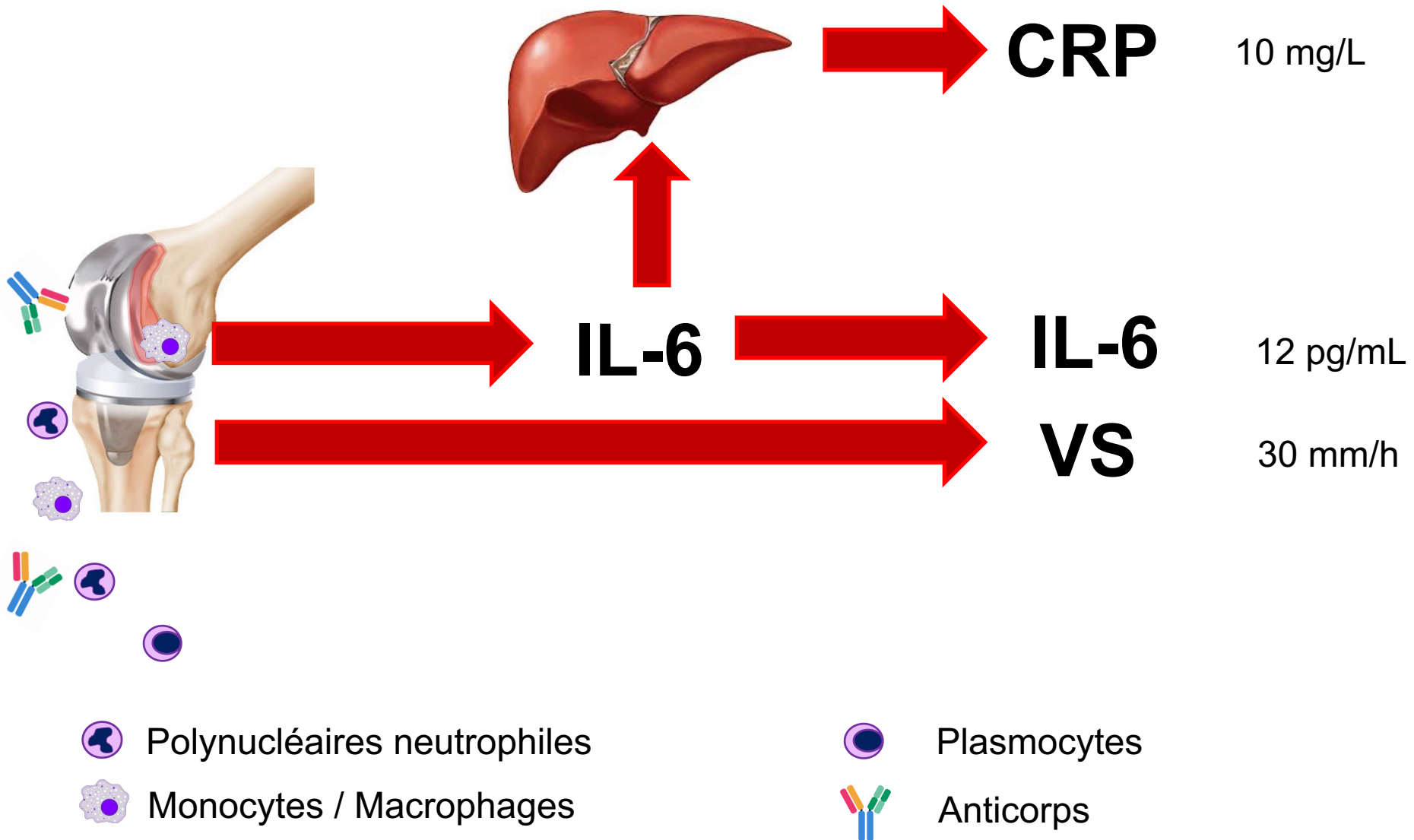
Fig. 4

Summary receiver operator characteristic curve (with 95% confidence interval) of all included studies that assessed erythrocyte sedimentation rate as a diagnostic marker for prosthetic joint infection.

J Bone Joint Surg Am. 2010

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Cut-off



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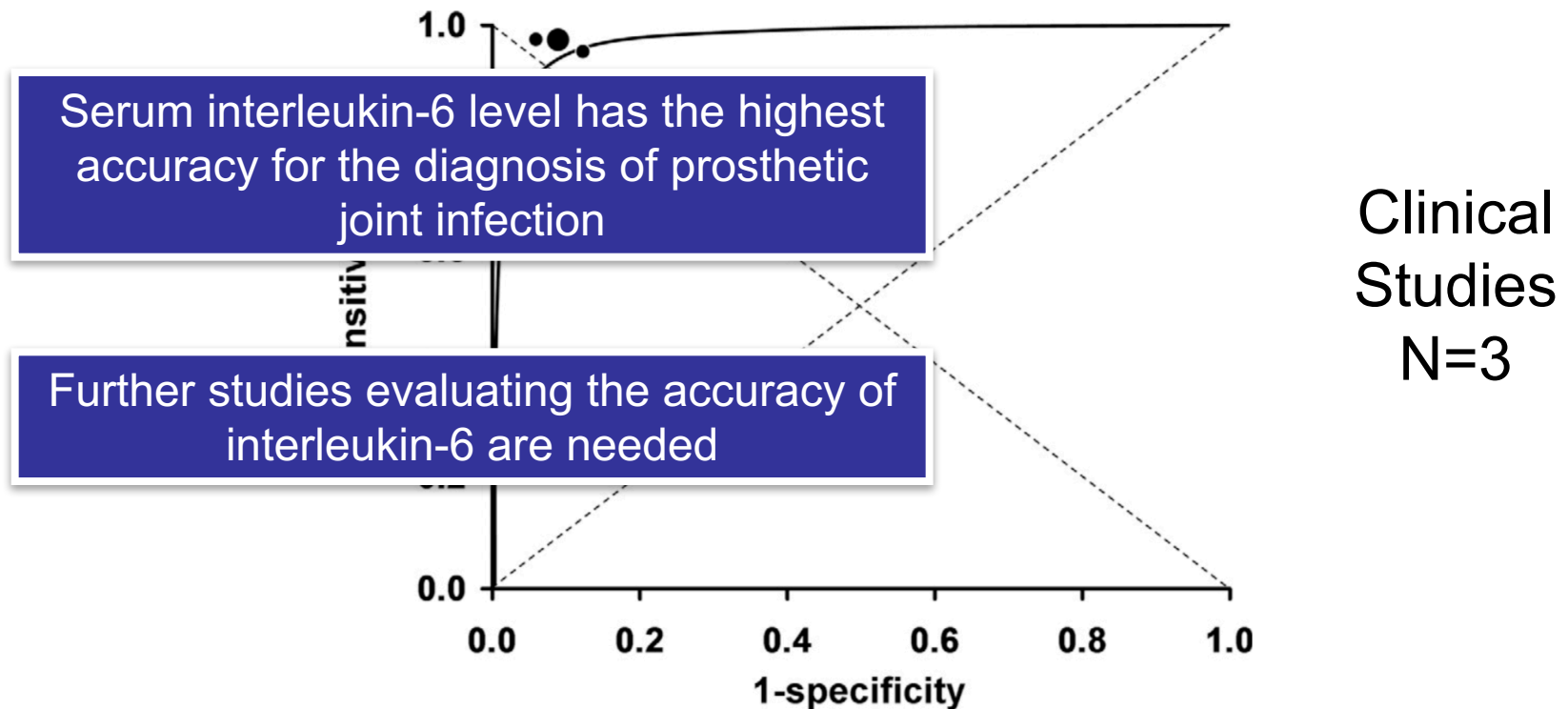
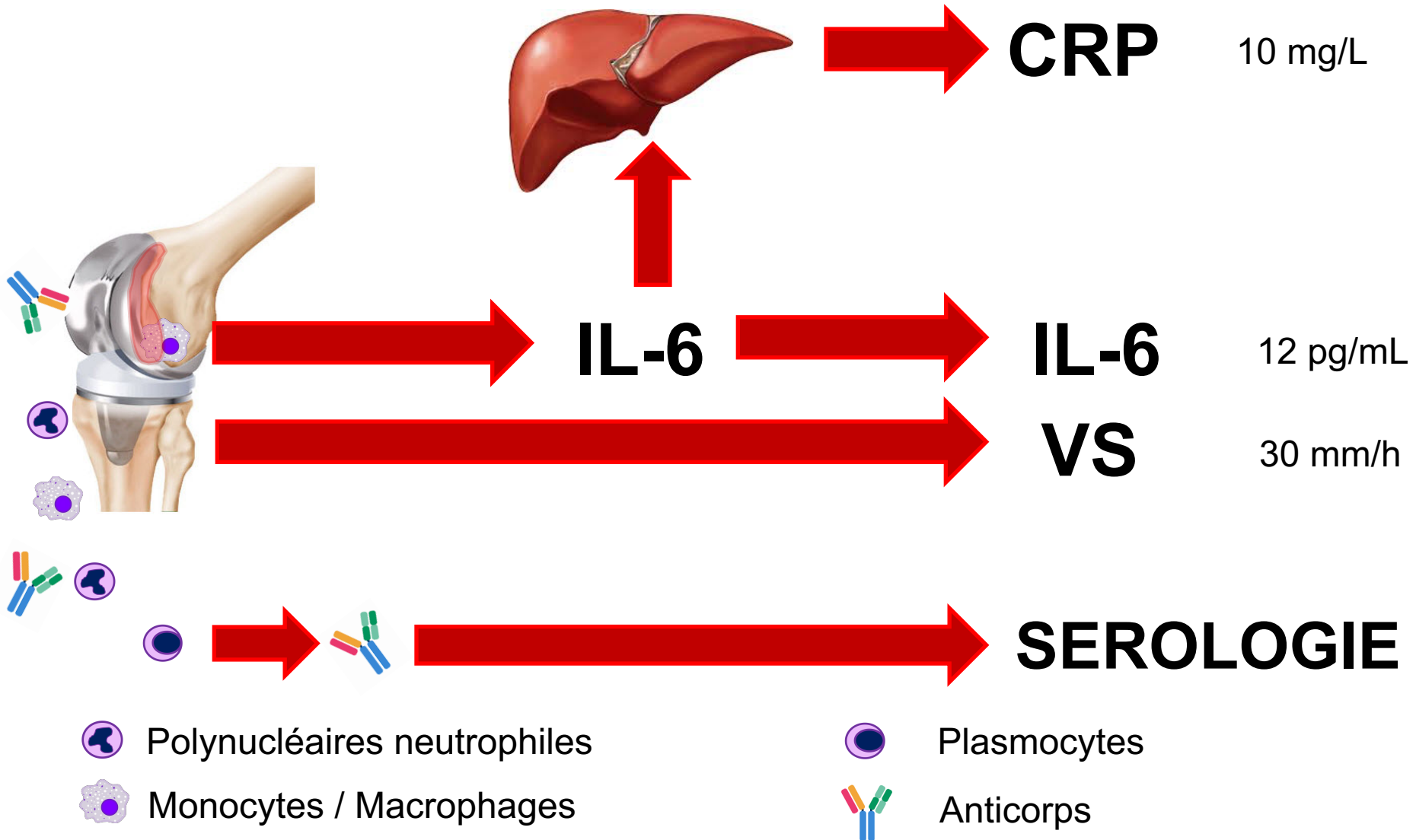


Fig. 5

Summary receiver operator characteristic curve of all included studies that assessed interleukin-6 level as a diagnostic marker for prosthetic joint infection.

Que peut on doser ?

Cut-off





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Multiplex Antibody Detection for Noninvasive Genus-Level Diagnosis of Prosthetic Joint Infection

Simon Marmor,^a Thomas Bauer,^b Nicole Desplaces,^c Beate Heym,^{d,e} Anne-Laure Roux,^{d,e} Olivier Sol,^f Julie Rogé,^f Florence Mahé,^f Laurent Désiré,^f Philippe Aegerter,^g Idir Ghout,^g Jacques Ropers,^g Jean-Louis Gaillard,^{d,e}  Martin Rottman^{e,h}

16 antigens

Staphylococcus n=8

S. agalactiae n=4

P. acnes n=4

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TABLE 1 Baseline characteristics of the population studied

Characteristic ^a	Total (<i>n</i> = 455)	Noninfected (<i>n</i> = 279)	Infected (<i>n</i> = 176)	<i>P</i> ^b
Age (mean ±SD) (yr)	69.6 ± 12.1	70.5 ± 11	68.3 ± 13.6	0.083
Female (no./total no. [%])	237/453 (52.3)	162/277 (58.5)	75/176 (42.6)	0.001
Wt (median [IQR]) (kg)	75 (64 to 87)	74 (62 to 85)	79.5 (65.8 to 92.2)	0.003
Excess wt (median [IQR]) (kg)	5.7 –3.6 to 15.8	5.2 –3.7 to 14.3	6.4 –3.2 to 19.1	0.077
Time since prosthesis insertion (no./total no. [%])	364/455 (80.1)	173/277 (62.8)	93/176 (52.8)	0.003
		Noninfected (<i>n</i> = 279)	Infected (<i>n</i> = 176)	<i>P</i> ^b
CRP of ≥10 mg/liter ^c		71/268 (26.5)	146/174 (83.9)	<0.001
ESR of ≥30 mm/h ^c		50/250 (20)	112/139 (80.6)	<0.001
Time since prosthesis insertion (no./total no. [%])				
≤3 mo	37/441 (8.4)	7/272 (2.6)	30/169 (17.8)	<0.001
>3 mo	404/441 (91.6)	265/272 (97.4)	139/169 (82.2)	
Sinus tract (no./total no. [%])	46/455 (10.1)	-	46/176 (26.1)	
CRP of ≥10 mg/liter ^c	217/442 (49.1)	71/268 (26.5)	146/174 (83.9)	<0.001
ESR of ≥30 mm/h ^c	169/389 (41.6)	50/250 (20)	112/139 (80.6)	<0.001

^a IQR, interquartile range; CRP, serum C-reactive protein; ESR, erythrocyte sedimentation rate.

^b Infected versus non-infected cases.

^c The cutoffs are taken from reference 8.

Multiplex Antibody Detection for Noninvasive Genus-Level Diagnosis of Prosthetic Joint Infection

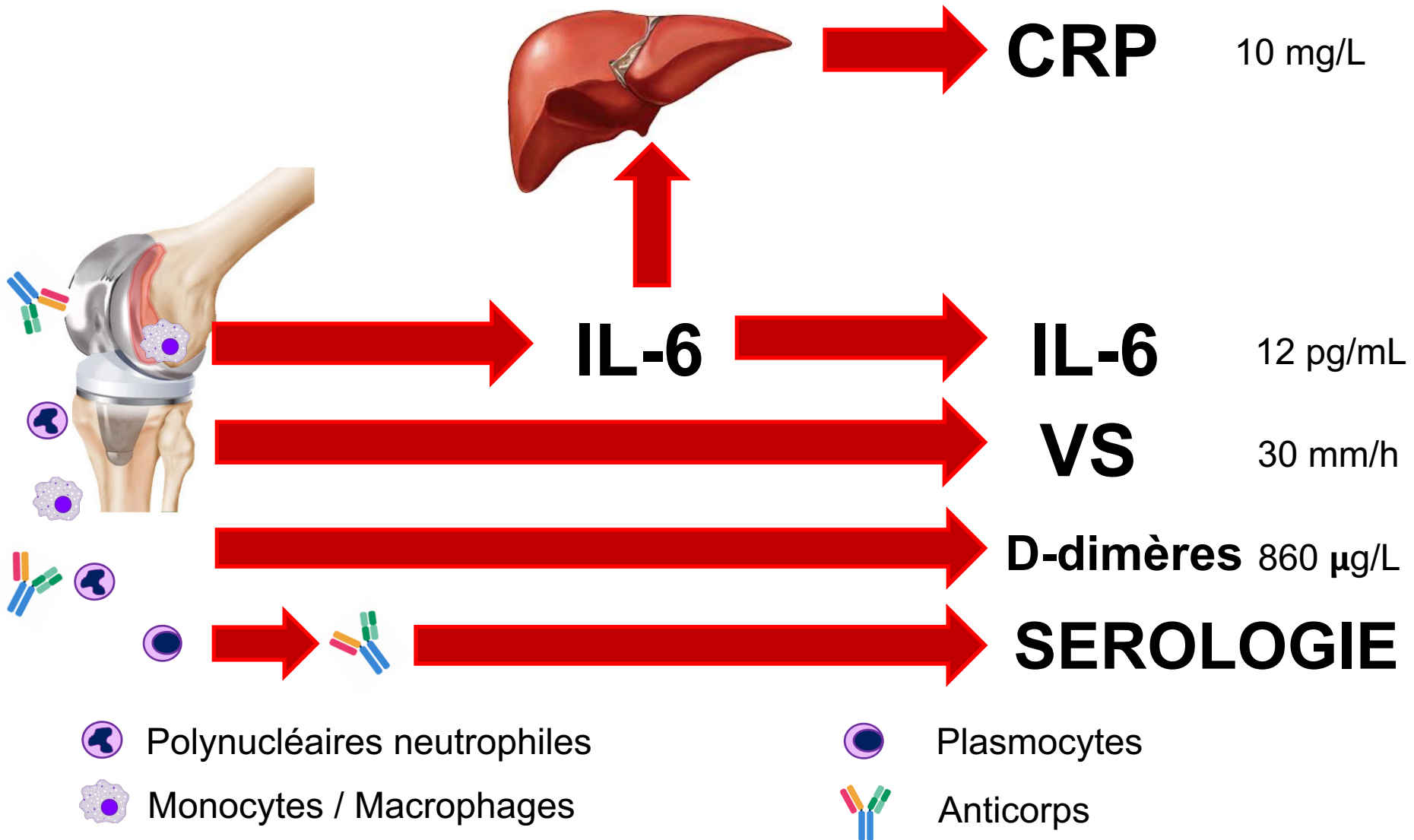
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Organism(s)	All cases	
	Sensitivity	Specificity
Staphylococci targeted	68/94 (72.3) [62.7–80.7]	213/264 (80.7) [75.6–85.1]
<i>S. aureus</i>	36/54 (66.7) [52.4–78.9]	
<i>P. acnes</i>	5/13 (38.5) [15.7–65.9]	235/277 (84.8) [80.2–88.7]
<i>S. agalactiae</i>	6/8 (75) [38.8–95.6]	250/270 (92.6) [89–95.3]
<i>P. acnes</i>	5/13 (38.5) [15.7–65.9]	235/277 (84.8) [80.2–88.7]

^a Data are no. (%) [95% confidence interval].

Que peut on doser ?

Cut-off

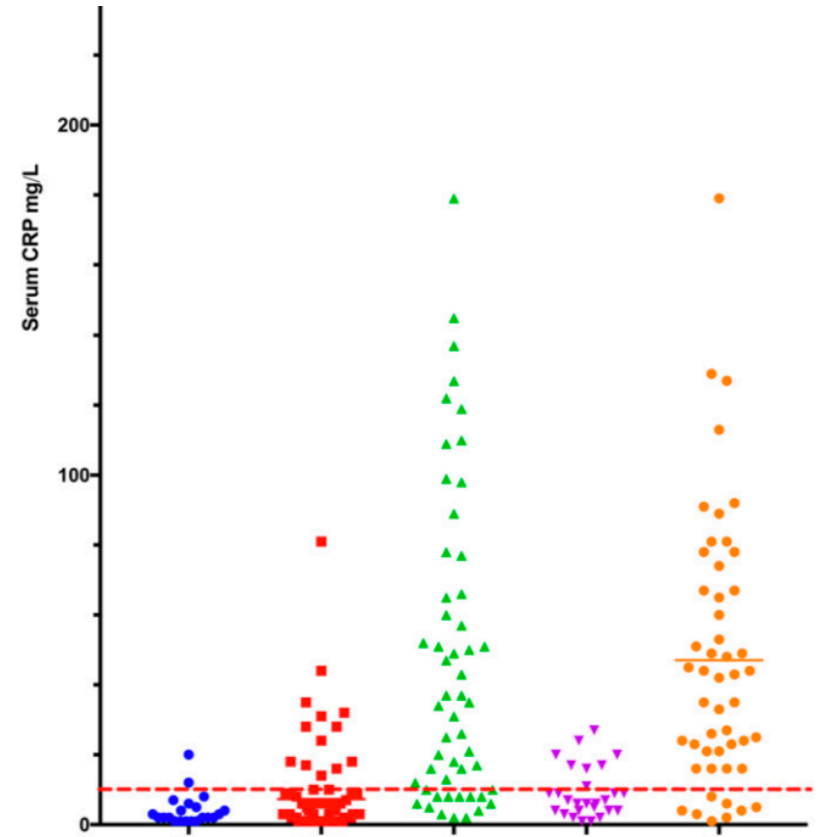


Serum D-Dimer Test Is Promising for the Diagnosis of Periprosthetic Joint Infection and Timing of Reimplantation

Alisina Shahi, MD, Michael M. Kheir, MD, Majd Tarabichi, MD, Hamid R.S. Hosseinzadeh, MD, Timothy L. Tan, MD, and Javad Parvizi, MD, FRCS

CRP

Sensibilité insuffisante
Spécificité insuffisante
VPP insuffisante



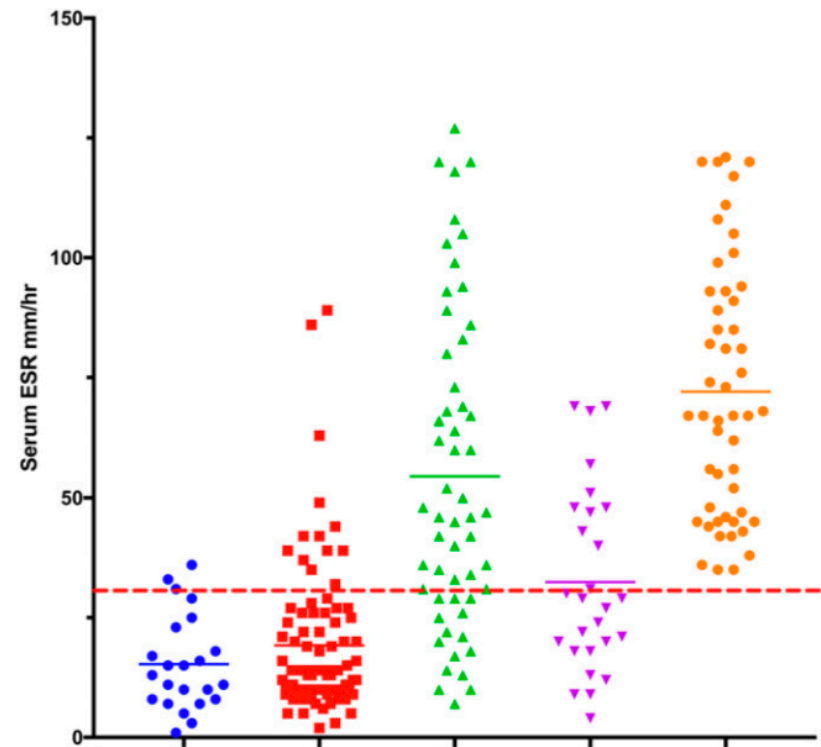
Primary arthroplasty
Aseptic revision
Revision for PJI
Reimplantation
Other infection

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VS

Sensibilité insuffisante
Spécificité insuffisante
VPP insuffisante



Primary arthroplasty
Aseptic revision
Revision for PJI
Reimplantation
Other infection

Serum D-Dimer Test Is Promising for the Diagnosis of Periprosthetic Joint Infection and Timing of Reimplantation

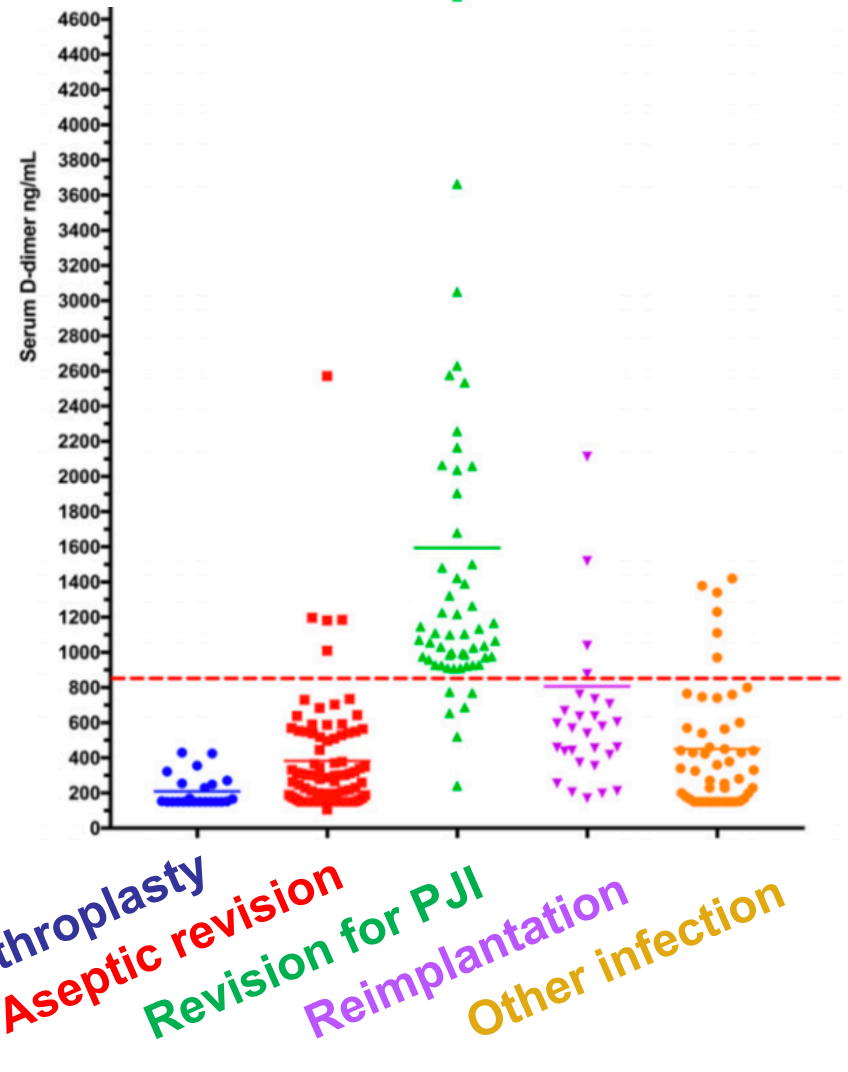
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D-Dimères

Sensibilité 89,5%

Spécificité 92,7%

VPP 83,6%



International Consensus Meeting on Prosthetic Joint Infection

Second **INTERNATIONAL
CONSENSUS MEETING (ICM)**
on **MUSCULOSKELETAL INFECTION**



Question 1: What preoperative serological tests should be given to patients undergoing revision surgery?

in patients with a failed hip or knee awaiting revision surgery?

Consideration should also be given to testing D-dimer (and IL-6) as a potential supplementary serological test

Recommendation:

In addition to a physical examination, including radiographic imaging, and performing

a physical examination of patients with a failed hip or knee awaiting revision surgery should have a serum Erythrocyte Sedimentation Rate (ESR) and C-reactive protein (CRP) measured. Patients with high index of suspicion for infection should be considered for further work up.

CRP

VS

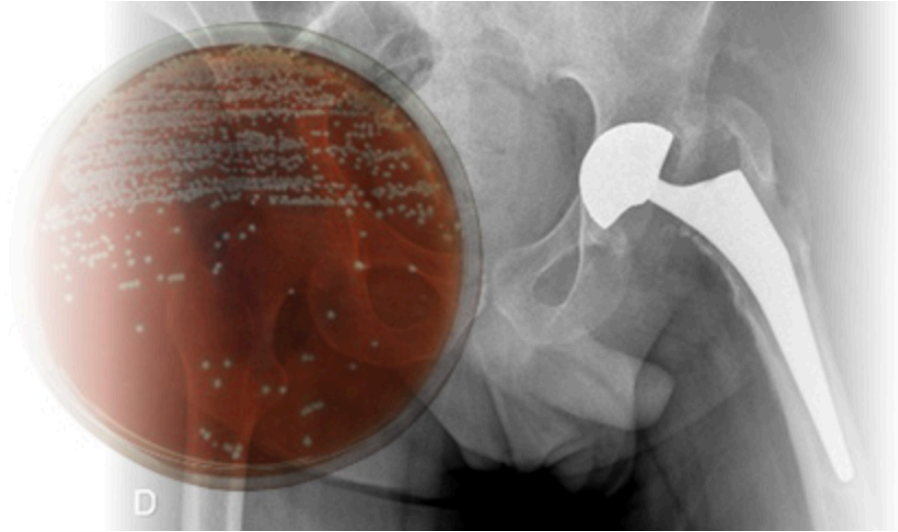
Level of Evidence: Moderate

Delegate Vote: Agree: 96%, Disagree: 4%, Abstain: 0% (Unanimous, Strongest Consensus)

ATTENTION AUX AINS

NE PAS HESITER A REPETER CES EXAMENS

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