"Le infezioni dell'apparato genitale e le malattie a trasmissione sessuale (NON-HIV): Aspetti clinici e diagnostici"

Le prostatiti

Tommaso Cai
U.O. Urologia Multizonale di Urologia
Ospedale Santa Chiara – Trento
Direttore: dr. Gianni Malossini

…Cos'è la prostatite???

G. De Chirico : Edipo e la Sfinge

JAMA®
The Journal of the American Medical Association
Vol. 282 No. 3, July 21, 1999

John N. Krieger, MD , Leroy Nyberg, Jr, PhD, MD ,
J. Curtis Nickel, MD

For the International Prostatitis Collaborative Network

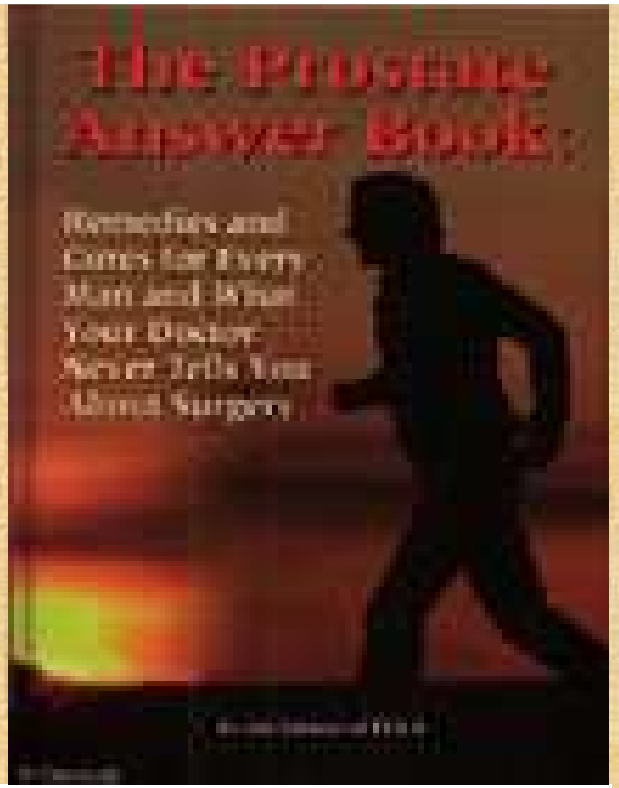
NIH Consensus Definition and Classification of Prostatitis

To the Editor: Prostatitis is a common cause of visits to primary care physicians and urologists. In practice, the clinical diagnosis of prostatitis depends on the history and physical examination, but there is no characteristic physical finding or diagnostic laboratory test. Patients with prostatitis experience considerable morbidity and may remain symptomatic for many years. Unfortunately, there is limited understanding of the pathophysiology and optimal treatment for most patients

NIH classification of prostatitis

Category	Name	Definition
I	Acute bacterial prostatitis	Acute infection of the prostate gland
II	Chronic bacterial prostatitis	Recurrent UTI, chronic infection of the prostate
III	Chronic abacterial prostatitis/ chronic pelvic pain syndrome (CPPS)	Discomfort or pain in the pelvic region (for at least 3 months) with variable voiding and sexual symptoms; no demonstrable infection
IIIA	Inflammatory CPPS	WBCs in the semen, EPS, or VB_3
IIIB	Noninflammatory CPPS	No WBCs in the semen, EPS, or VB_3
IV	Asymptomatic inflammatory prostatitis (AIP)	Evidence of inflammation in biopsy specimen, semen, EPS, or VB_3; no subjective symptoms

EPS = expressed prostatic secretion; VB_3 = third initial-stream bladder specimen; WBCs = white blood cells
Adapted from Krieger JN et al.[12]



Prostatitis

Is it time to change the rules?

By J. Curtis Nickel, MD

The author presents a contemporary management strategy based on extensive research and experience, a comprehensive review of the literature, and "old fashioned" common sense.

La prostatite oggi

Prevalence, diagnosis and treatment of prostatitis in Italy: a prospective urology outpatient practice study

M. RIZZO, F. MARCHETTI*, F. TRAVAGLINI, A. TRINCHIERI† and J.C. NICKEL‡

*Department of Urology, University of Florence, Florence, *Medical Department, GlaxoSmithKline S.p.a, Verona, †Clinics of Urology, University of Milan, Milan, Italy, and ‡Queen's University, Kingston, Canada*

Accepted for publication 14 July 2003

Presented in part at the American Society for Microbiology Annual Meeting, September 27–30, 2002, San Diego, CA

Survey in 70 centri urologici italiani, nel 2003

Geographical area	No. of patients evaluated	with prostatitis	Prevalence, %
Total	8503	1089	12.8
North	3571	333	9.3
Central	1175	236	20.1
South & Isles	3757	520	13.8

Journal of Urology, 2007

Prevalence, Incidence Estimation, Risk Factors and Characterization of Chronic Prostatitis/Chronic Pelvic Pain Syndrome in Urological Hospital Outpatients in Italy: Results of a Multicenter Case-Control Observational Study

Riccardo Bartoletti,* Tommaso Cai, Nicola Mondaini, Nicola Dinelli, Novello Pinzi, Carlo Pavone, Paolo Gontero, Andrea Gavazzi, Gianluca Giubilei, Domenico Prezioso, Sandra Mazzoli, Vieri Boddi, Kurt Naber and the Italian Prostatitis Study Group

From the Departments of Urology (RB, TC, NM, AG, GG) and Public Health and Epidemiology (VB), University of Florence and Sexually Transmitted Diseases Centre, Santa Maria Annunziata Hospital (SM), Florence, Urology Units, Department of Surgery, University of Pisa (ND), Pisa and Campo di Marte Hospital (NP), Lucca, and Departments of Urology, University of Palermo (CP), Palermo, University of Piemonte Orientale (PG), Novara and "Federico II University" (DP), Naples, Italy, and Technical University of Munich (KN), Munich, Germany

…protocollo dello studio

764 pazienti affetti da prostatite cronica (CP)
152 controlli sani

a) Anamnesi accurata (stile di vita, alimentazione, abitudini sesseuali etc.)

b) Somministrazione di: NIH-CPSI, IPSS, IIEF-5, VAS

c) Esame obiettivo + DRE + TRUS + FLUSSOMETRIA

d) Analisi microbiologica sui campioni da test di Meares e liquido seminale
   - urina I° getto
   - urina getto intermedio
   - secreto prostatico
   - urina post-massaggio prostatico
   - liquido seminale

TABLE 2. *Clinical evaluation*

	No. Pts	No. Controls (%)	p Value (Wilcoxon test)
Overall	764	152	
Abdominal symptoms:	482 (63)	9 (6)	
Constipation	208 (43.2)	1 (11.1)	<0.001
Diarrhea	69 (14.2)	0 (0.0)	—
Meteorism	118 (24.5)	1 (11.1)	<0.001
Slow digestion	30 (6.3)	1 (11.1)	<0.001
Multiple	57 (11.8)	6 (66.7)	<0.001
Urinary symptoms:	519 (68)	0 (0.0)	
Frequency	208 (40)	—	—
Burning	6 (1)	—	
Tenesmus	10 (2)	—	
Difficulty starting to void	62 (12)	—	
Painful micturition	67 (13)	—	
Multiple	166 (32)	—	
Sexual symptoms:	305 (40)	12 (8)	
Erectile dysfunction	210 (69)	0 (0.0)	—
Premature ejaculation	64 (21)	12 (100)	0.02
Erectile dysfunction + premature ejaculation	31 (10)	0 (0.0)	—
Sexual desire abnormalities	43 (5.6)	—	—
Pain:	627 (82)	0 (0.0)	
Perineal	364 (58)	—	—
Scrotal	138 (22)	—	
Suprapubic	75 (12)	—	
Lower abdominal	50 (8)	—	
Pain frequency:*			
Daily	602 (96)		—
Weekly	25 (4)		

* In 627 patients with pain.

TABLE 4. *Microbiological evaluation*

	No. Pts (%)	No. Controls (%)
Pos M&S test	102 (13.3)	4 (2.6)*
Gram-pos bacteria:	50 (49)	1 (25)
Staphylococcus aureus	8 (16)	—
Staphylococcus epidermidis	1 (2)	—
Staphylococcus hominis	1 (2)	—
Enterococcus faecalis	40 (80)	1 (100)
Gram-neg bacteria:	50 (49)	3 (75)
Escherichia coli	36 (72)	2 (66.7)
Proteus mirabilis	4 (8)	—
Serratia species	2 (4)	—
Enterobacter species	8 (16)	1 (33.3)
Atipical bacteria	2 (2)	0
Pos urethral swab:†	46 (6)	Not done
C. trachomatis	10 (21.7)	
Ureaplasma urealyticum	8 (17.3)	
Mycoplasma hominis	2 (4.3)	
Yeast	2 (4.3)	
HPV+HSV 1 or 2	24 (52.4)	

Fisher's exact test p <0.001.
† In 662 patients with CP/CPPS and negative M & +S test.

Considerazioni…

La prevalenza della prostatite in Italia è comparabile a quella di altri Paesi europei (10-14%) mentre la stima dell'incidenza di malattia non è un dato ad oggi comparabile, tuttavia molto elevato.

Mehik A. et al. Brit.J.Urol. 86:443-448,2000

Considerazioni…

- Da un punto di vista anamnestico hanno rilevanza statistica e clinica:
  - Stipsi/irregolarità dell'alvo
  - Gonfiore postprandiale/ digestione lenta
  - Alimentazione ricca di carboidrati, latte, latticini e formaggi in contrapposizione a quella ricca di alimenti giallo/verdi
  - Fumo di sigaretta

Considerazioni…

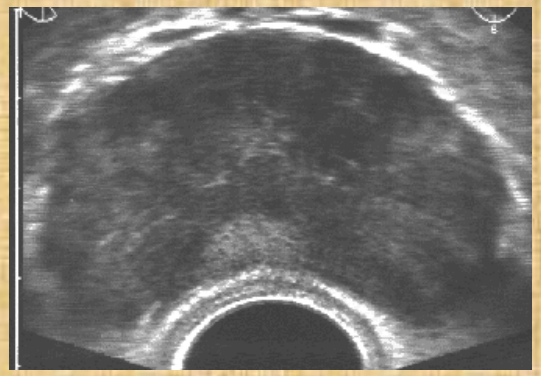
- L’attività sessuale condiziona la prostatite
  - N° di partners → mts?
  - Metodo contraccettivo → coitus interrupt.
- La prostatite condiziona l’attività sessuale
  - Calo del desiderio sessuale
  - Disturbi erezione ed eiaculazione

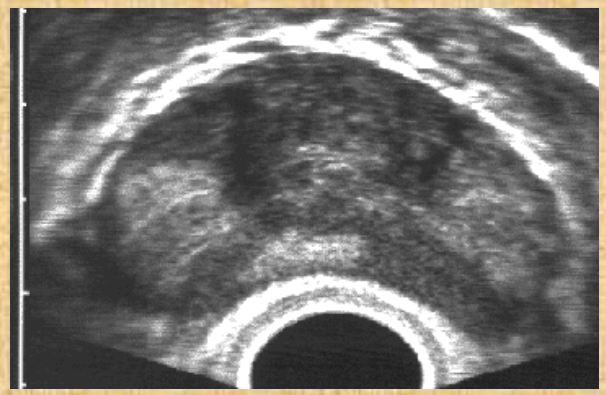
Considerazioni…

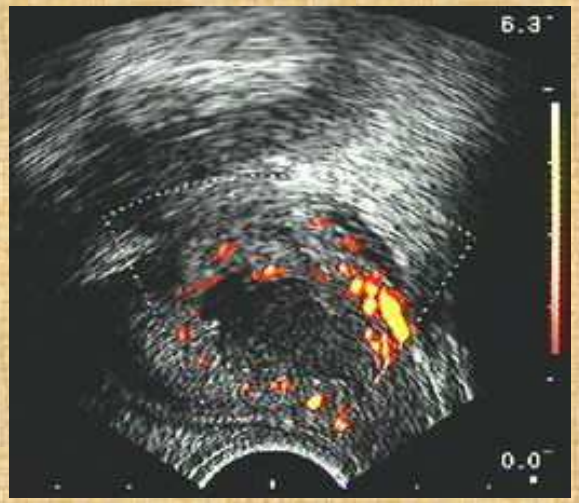
- All’esame clinico sono rilevanti i seguenti parametri:
  - Reperti anomali all’esplorazione rettale
  - Addome meteorico
  - Presenza di emorroidi e/o ragadi anali

Considerazioni…

- Fra i parametri ecografici assume rilevanza clinica e statistica solo
  - Presenza di calcificazioni intraprostatiche







Considerazioni…

- Il riscontro di prostatite batterica è molto basso (13.3%) nonostante sia più elevato della media riportata in altri paesi europei (7%).

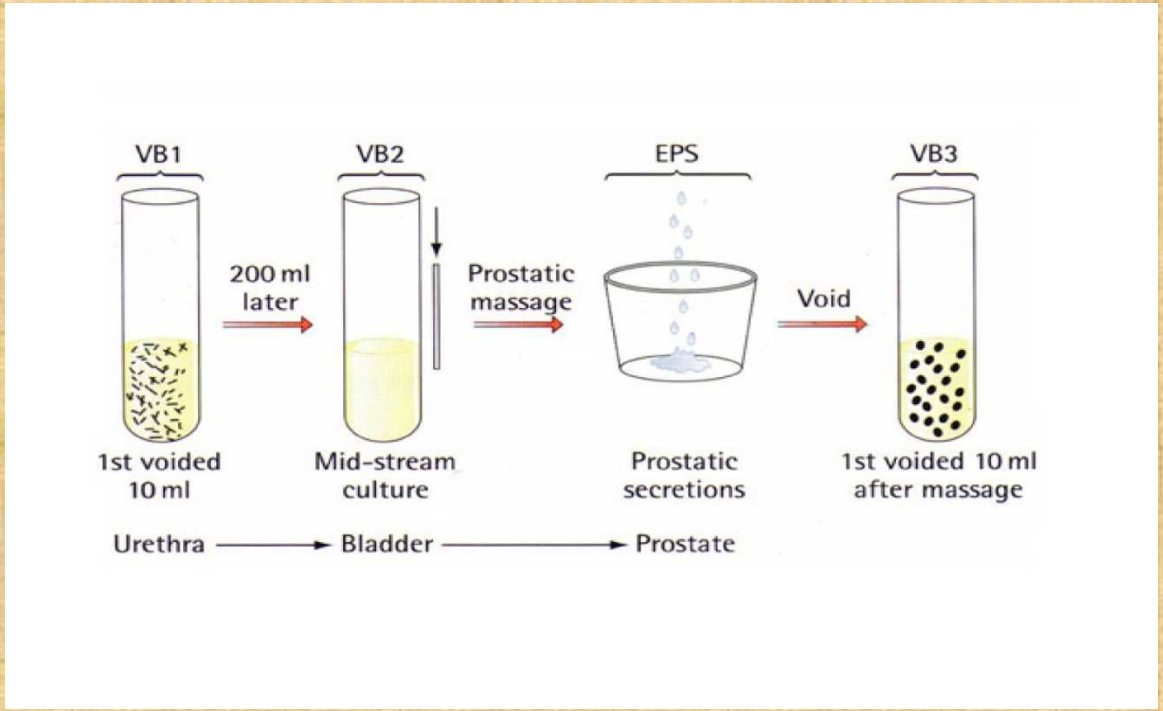
- L'uso sistematico del M&S test ha consentito una valutazione omogenea dei pazienti e possibilità di trattamento mirato

N.B.: Sono stati individuati batteri anche nel seme di controlli asintomatici

- ✓I batteri presenti nel liquido seminale sono rilevanti ai fini della diagnosi?
- ✓Questi soggetti devono essere considerati come affetti da prostatite di tipo IV?
- ✓I batteri nel liquido seminale sono rilevanti nella genesi della malattia o rappresentano semplicemente una infezione secondaria?

Considerazioni…

- Test di Meares-Stamey su 3 o 4 campioni (modificato con l'aggiunta della valutazione del liquido seminale)



Considerazioni…

Nuovi scenari microbiologici…

The Journal of Microbiology (2011) Vol. 49, No. 3, pp. 448-454
DOI 10.1007/s12275-011-0391-z

Epidemiological Features and Resistance Pattern in Uropathogens Isolated from Chronic Bacterial Prostatitis

Tommaso Cai[1*], Sandra Mazzoli[2], Francesca Meacci[2], Vieri Boddi[3], Nicola Mondaini[4], Gianni Malossini[1], and Riccardo Bartoletti[4]

[1]*Department of Urology, Santa Chiara Hospital, Trento 38123, Italy*
[2]*Sexually Transmitted Disease Centre, Santa Maria Annunziata Hospital, Florence 50011, Italy*
[3]*Department of Public Health and Epidemiology,* [4]*Department of Urology, University of Florence, Florence 50011, Italy*

(Received September 29, 2010 / Accepted January 27, 2011)

Table 2. Microbiological culture results and organism identification over the all study period

Enrolled patients	15,257	
Positive patients	6,221	
Gram-positive	4,601	
Gram-negative	1,620	
	Number of positive patients	Percentage
Isolated bacteria		
Enterococcus faecalis	2,745	44.0
Enterococcus faecium	101	1.4
Staphylococcus aureus	280	4.4
Staphylococcus haemolyticus	640	10.1
Staphylococcus epidermidis	327	5.2
CONS	154	2.4
Streptococcus agalactiae	267	4.2
Other Streptococci	87	1.2
Acinetobacter spp.	8	0.1
Citrobacter spp.	80	1.2
Enterobacter spp.	78	1.2
Escherichia coli	698	11.1
Proteus mirabilis	142	2.2
Klebsiella oxitoca	144	2.3
Klebsiella pneumoniae	100	1.5
Morganella morgani	120	1.7
Proteus mirabilis	142	2.2
Pseudomonas aeruginosa	44	0.6
Pseudomonas putida	16	0.1
Serratia marcescens	190	2.9

Table 3. Microbiological culture results and organism identification stratified per year collection

	Study period (years)				*p*
	'97-'99	*'00-'02*	*'03-'05*	*'06-'08*	
Total cultured bacteria	1092	1138	1281	2710	
Isolated bacteria					
Enterococcus faecalis	360	389	746	1250	<0.001 (I)
Enterococcus faecium	40	41	8	12	<0.001 (D)
Staphylococcus aureus	131	132	9	8	<0.001 (D)
Staphylococcus haemolyticus	150	150	39	301	<0.001 (I)
Staphylococcus epidermidis	30	30	9	258	<0.001 (I)
CONS	12	12	40	90	<0.001 (I)
Streptococcus agalactiae	77	80	23	87	n.s.
Other Streptococci	13	13	18	43	n.s.
Acinetobacter spp.	1	1	2	4	n.s.
Citrobacter spp.	10	10	29	31	n.s.
Enterobacter spp.	11	11	28	28	n.s.
Escherichia coli	110	118	149	321	0.0095 (I)
Klebsiella oxitocia	12	13	39	80	<0.001 (I)
Klebsiella pneumoniae	15	15	22	48	n.s.
Morganella morgani	11	11	31	67	0.0006 (I)
Proteus mirabilis	20	23	54	45	n.s.
Pseudomonas aeruginosa	8	8	18	10	n.s.
Pseudomonas putida	1	1	6	8	n.s.
Serratia marcescens	80	80	11	19	<0.001 (D)

p, difference between prevalence in 1997-1999 and 2006-2008 years period. (I), increasing; (D), decreasing; n.s., no statistically significant

Significant differences between *E. faecalis* prevalence in the 1997-1999 and 2006-2008 periods were found. *E. coli* showed a significant difference between prevalence in 1997-1999 and 2006-2008 periods. Gram-positive organisms showed a decreasing of susceptibility to ciprofloxacin as well as Gram-negative strains, while a good susceptibility to the levofloxacin was evidenced. *E. faecalis* prevalence seemed to be raised in 2006-2008 periods. Moreover, a decreasing of activity of ciprofloxacin and a good activity profile of levofloxacin have been reported.

Considerazioni…

…interpretazioni di una patologia "batterica"…

- **Infezione primitiva** : i batteri sono la causa dell'infezione, dunque dell'infiammazione prostatica
- **Infezione secondaria**: sovrapposizione batterica su un tessuto in preda a flogosi

Considerazioni…

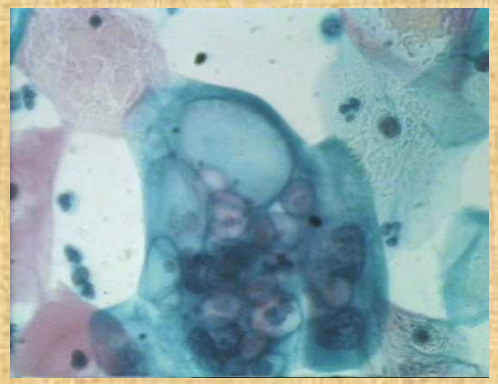
- La “chiave” di interpretazione delle prostatiti nasce dallo studio sulle forme non batteriche (tipo IIIA e IIIB)
- Studi clinici recenti hanno evidenziato leococitospermia in p.ti asintomatici (tipo IV) con presenza non significativa di molteplici stipiti batterici *(Korrovits P, Eur.Urol.2006)*

Considerazioni…

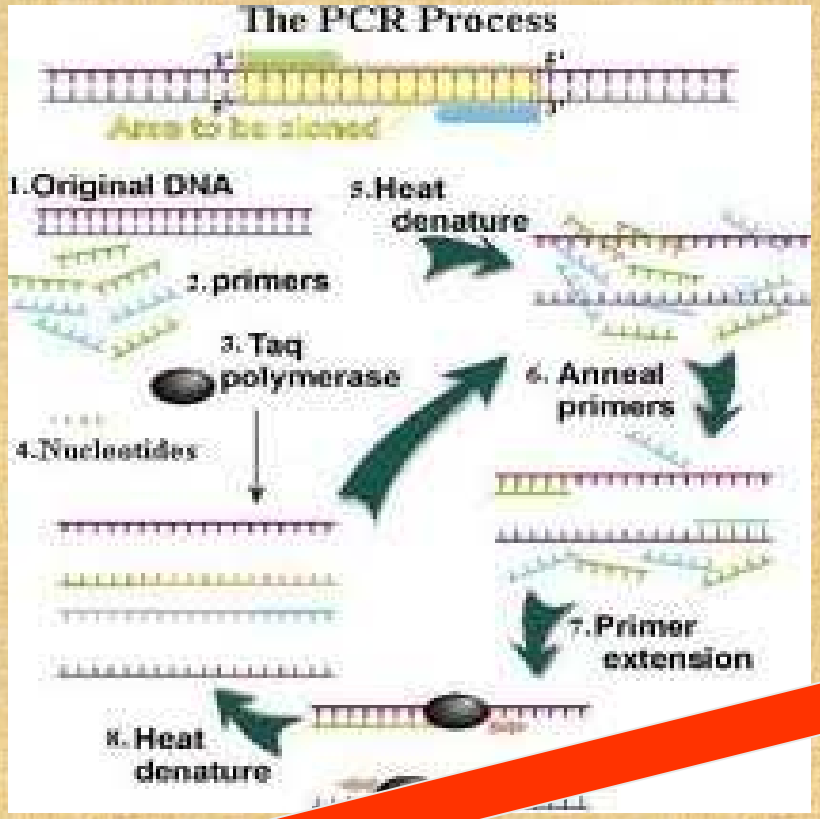
- Ma le forme “non batteriche” sono davvero tali oppure sono legate a batteri che non ricerchiamo in modo corretto?

Ruolo di Chlamydia trachomatis nelle prostatiti

…esperienza Fiorentina…



Considerazioni…



CLINICA

PCR

11.8%

1995

36 %

2002

PCR

38 %

2005

CASE REPORT

Journal of Andrological Sciences 2009;16:130-132

Chlamydia trachomatis attacks young male spermatozoon

T. Cai, S. Mazzoli*, D. Bani**, T. Sacchi Bani**, R. Bartoletti

*Department of Urology, University of Florence, Italy; *STDs Centre, Santa Maria Annunziata Hospital, Florence, Italy; **Department of Anatomy, Histology & Forensic Medicine, University of Florence, Italy*

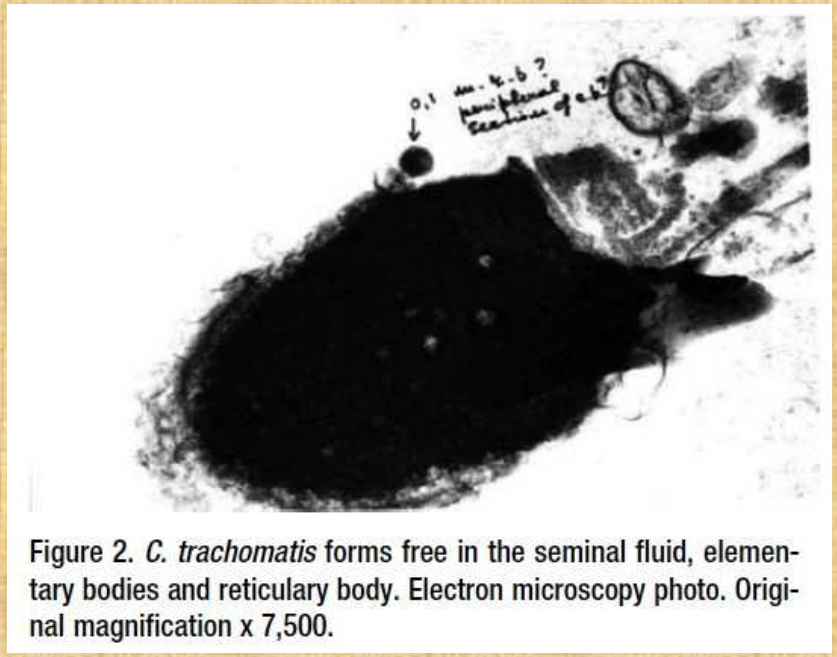
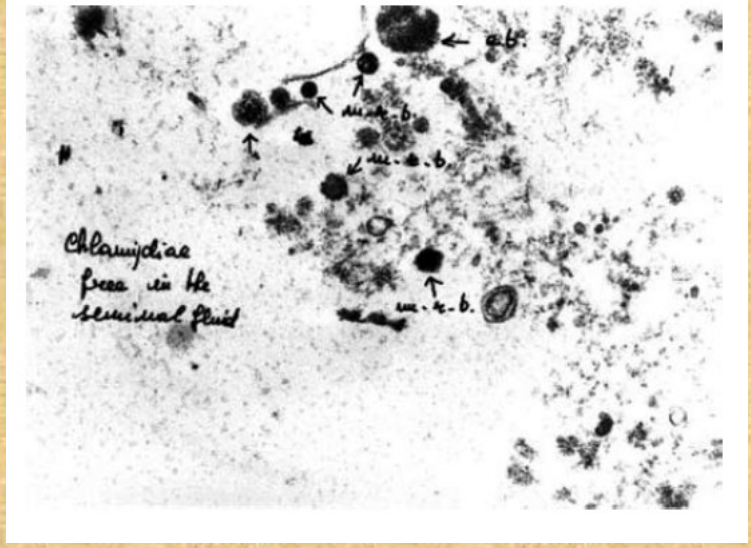


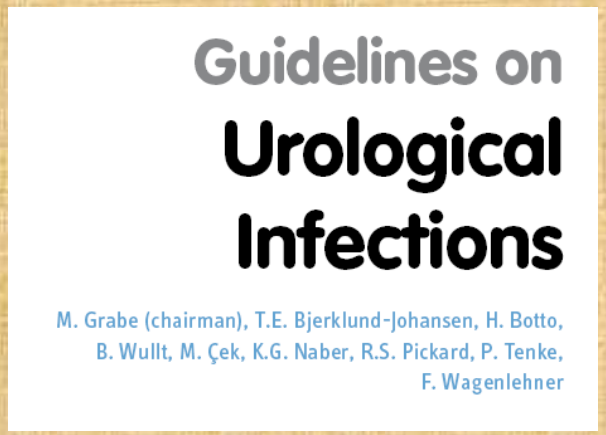
Figure 2. *C. trachomatis* forms free in the seminal fluid, elementary bodies and reticulary body. Electron microscopy photo. Original magnification x 7,500.



CHLAMYDIA TRACHOMATIS: diagnosi

A livello laboratoristico la ricerca di Chlamydia trachomatis può essere fatta utilizzando due metodologie di laboratorio:

- ricerca diretta (colture cellulari)
- *ricerca indiretta* (immunoistochimica; immunoenzimatica; PCR)



CHLAMYDIA TRACHOMATIS: diagnosi – lati oscuri…

…nel 2006, è stato descritta in Svezia una nuova Chlamydia trachomatis, variante appartenente al sierotipo E, con una delezione nel plasmide criptico, che potrebbe essere la causa di falsi negativi…

Ripa T., A variant of Chlamydia trachomatis with deletion in cryptic plasmid: implications for use of PCR diagnostic tests. Euro Surveill. 2006

EUROPEAN UROLOGY 51 (2007) 1385–1393

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

Infections

Interleukin 8 and Anti-*Chlamydia trachomatis* Mucosal IgA as Urogenital Immunologic Markers in Patients with *C. trachomatis* Prostatic Infection

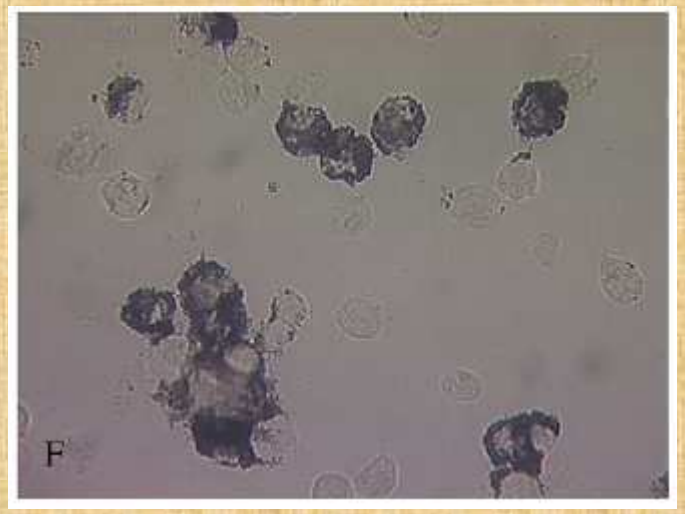
Sandra Mazzoli [a], *Tommaso Cai* [b,*], *Valentina Rupealta* [a], *Andrea Gavazzi* [b], *Roberto Castricchi Pagliai* [a], *Nicola Mondaini* [b], *Riccardo Bartoletti* [b]

[a] STDs Centre, Santa Maria Annunziata Hospital, Florence, Italy
[b] Department of Urology, University of Florence, Italy

Table 1 – Patient and control characteristics and clinical and laboratory data

	Subject characteristics	Difference between the two groups, *p*
No. of patients	78	
No. of controls	20	
Total	98	
Median age, yr		
Patients (range)	40.5 (20–46)	0.87
Controls (range)	39.3 (22–43)	
Clinical data		
Mean time from symptoms starting, yr		
Patients (range)	3.4 (2–7)	
Controls	–	
Symptoms score, mean		
IPSS		<0.001
Patients (range)	9.02 (1–24)	
Controls (range)	2.3 (0–6)	
NIH-CPSI		<0.001
Patients (range)	14.89 (3–26)	
Controls (range)	4.3 (0–8)	
Laboratory data		
CT-DNA analysis (% positive)		
CT-*omp1* gene		<0.001
Patients	78/78 (100%)	
Controls	0/20 (0%)	
CT-pDNA (% positive)		<0.001
Patients	35/78 (44.8%)	
Controls	0/20 (0%)	
Anti-CT mucosal IgA (% positive)		<0.001
Patients	54/78 (69.2%%)	
Controls	0/20 (0%)	
IL-8 evaluation (% positive)		<0.001
Patients	59/78 (75.6%)	
Controls	0/20 (0%)	
IL-8 mean level, pg/ml		<0.001
Patients	623.72	
Controls	–	

The difference between patients and subjects are reported with *p*. IPSS = International Prostate Symptom Score; NIH-CPSI = National Institutes of Health-Chronic Prostatitis Symptom Index; CT-cDNA = *Chlamydia trachomatis* chromosomal DNA; CT-pDNA = *Chlamydia trachomatis* plasmid DNA; Anti-CT mucosal IgA = anti- *Chlamydia trachomatis* mucosal Immunoglobulin A = IL-8 = interleukin 8.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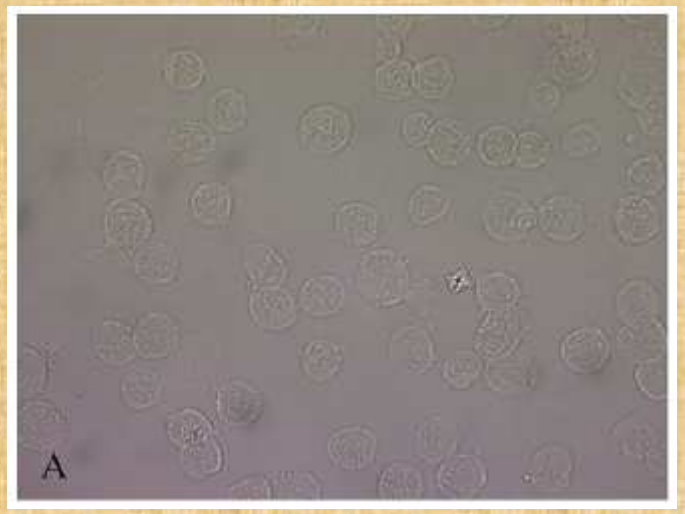
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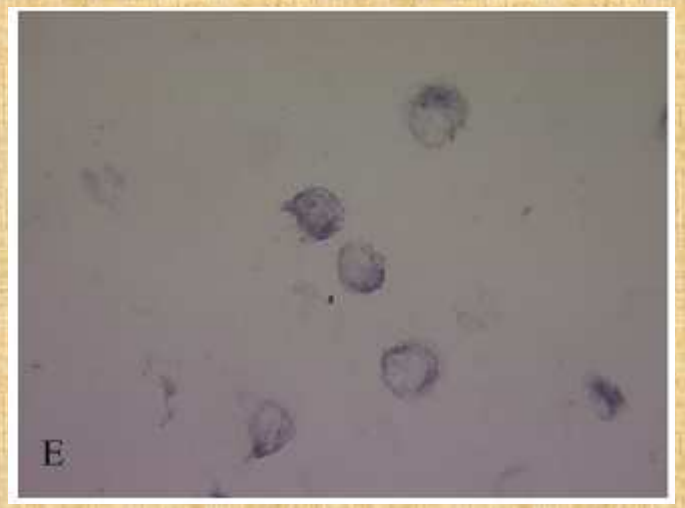
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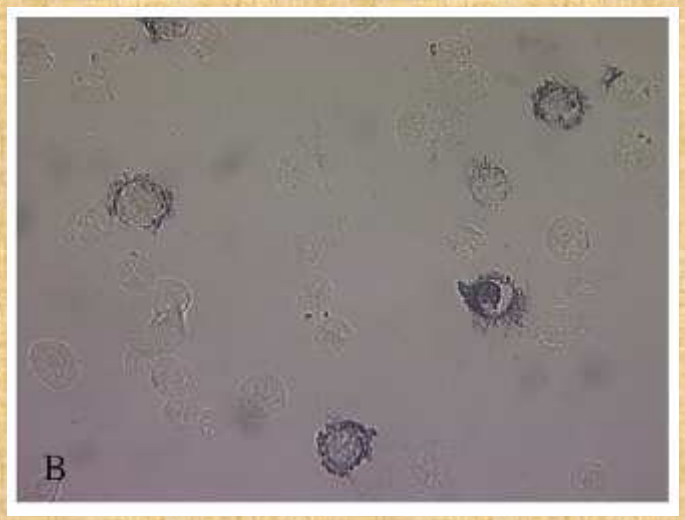
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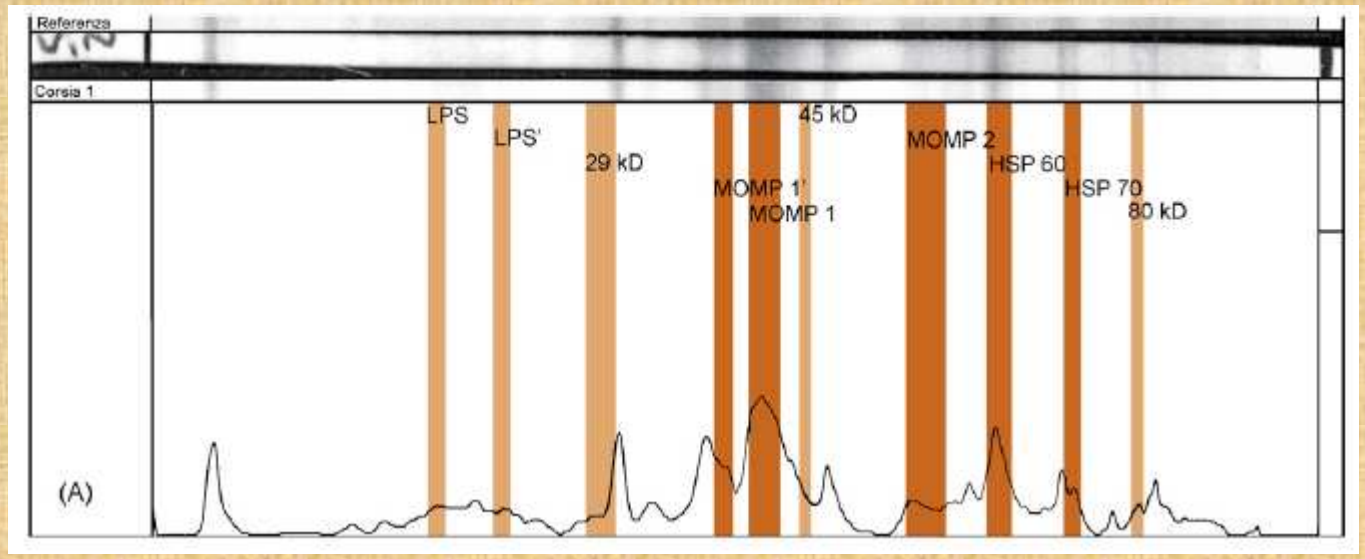

Conclusions: Our results clearly highlight the role of immune system activation in the pathophysiology of CP/CPPS and that seminal IL-8 and mucosal IgA levels specific to CT antigens appear to be the best immunologic markers of chronic chlamydial prostatitis status.

Considerazioni…

- Il ruolo di Chlamydia trachomatis è sottostimato nelle prostatiti batteriche e soprattutto il suo ruolo nelle possibili sequele e complicanze.

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European Association of Urology

Andrology

Chlamydia trachomatis Infection Is Related to Poor Semen Quality in Young Prostatitis Patients

Sandra Mazzoli[a], *Tommaso Cai*[b,*], *Patrizia Addonisio*[a], *Adriano Bechi*[a], *Nicola Mondaini*[b], *Riccardo Bartoletti*[b]

[a] Sexually Transmitted Disease Centre, Santa Maria Annunziata Hospital, Florence, Italy
[b] Department of Urology, University of Florence, Florence, Italy

	Patients characteristics	
	Group A (uropathogens)	Group B (*C. trachomatis* positive)
Enrolled patients, no.	707	454
Median age, yr (range)	35.9 (18–44)	36.8 (18–44)
Clinical data		
Time from symptoms starting, mean (range)	2.2 (1–6)	2.7 (1–6)
Symptoms score, mean (range)		
IPSS	8.70 (2–24)	8.99 (2–24)
NIH-CPSI	13.37 (11–26)	13.73 (11–26)
Laboratory data		
Group A (uropathogens)		
Patients, no. (%)	**707 (60.9)**	
Isolated bacteria (%)		
Enterococcus species	37	
Escherichia coli	18	
Klebsiella species	7	
Serratia species	2	
Group B streptococcus	10	
Staphylococcus saprophyticus	26	
Group B (C. trachomatis positive)		
Patients, no. (%)		**454 (39.1)**
C. trachomatis plasmidic DNA positive, no. (%)		101 (22.3)
C. trachomatis secretory IgA positive, no. (%)		165 (36.3)
Both *C. trachomatis* plasmidic DNA and secretory IgA positivities, no. (%)		188 (41.4)
C. trachomatis serum IgA positive, no. (%)		163 (36)
C. trachomatis serum IgG positive, no. (%)		191 (42)
Both *C. trachomatis* serum IgA and IgG positive, no. (%)		100 (22)

C. trachomatis = *Chlamydia trachomatis*; IPSS = International Prostate Symptom Score; NIH-CPSI = National Institutes of Health Chronic Prostatitis Symptom Index; Ig = immunoglobulin.

Table 2 – Semen parameters

	Group A	Group B	*p*	Normal value*
Volume	3.10 (±3.2)	2.91 (±2.1)	0.63	2.0–5.0 ml
pH	8.0 (±0.3)	8.1 (±0.2)	0.88	7.2–7.8
Sperm concentration	80 (±18.2)	24.7 (±12.1)	<0.001	$\geq 20 \times 10^6$ per millilitre
Total sperm count				$\geq 40 \times 10^6$ spermatozoa
Motility	63.4 (±15.9)	34.4 (±5.9)	<0.001	≥50% with forward progression or ≥25% with rapid linear progression within 60 min after collection
Morphology	58.3 (±23.4)	33.8 (±13.9)	<0.001	≥50% with normal morphology
Viability				≥75% live (ie, excluding dye)
WBC				$< 1 \times 10^6$ per millilitre

WBC = white blood cell; WHO = World Health Organisation.
* According to WHO 1999 standards.

Conclusions: This study demonstrated the role of chronic prostatitis resulting from *C. trachomatis* in male fertility decrease, highlighting probable immunomediated damage to germinal cells because of *C. trachomatis* infections.

Effect of **Human PapillomaVirus** and **Chlamydia trachomatis** co-infection on sperm parameters in young heterosexual men with chronic prostatitis-related symptoms.

Cai T. et al.

In press su BJU International

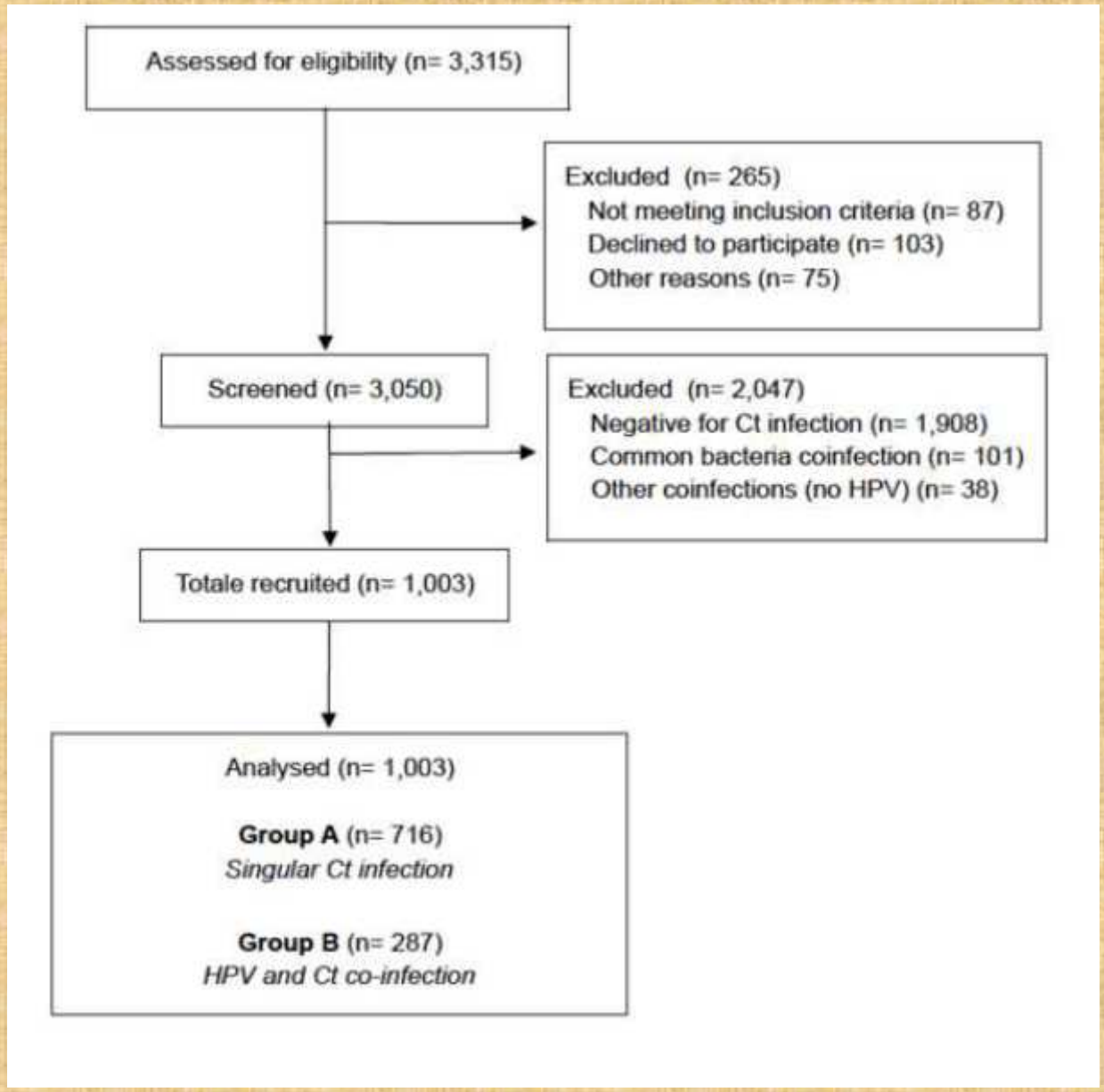

Assessed for eligibility (n= 3,315)
Excluded (n= 265)
Not meeting inclusion criteria (n= 87)
Declined to participate (n= 103)
Other reasons (n= 75)
Screened (n= 3,050)
Excluded (n= 2,047)
Negative for Ct infection (n= 1,908)
Common bacteria coinfection (n= 101)
Other coinfections (no HPV) (n= 38)
Totale recruited (n= 1,003)
Analysed (n= 1,003)
Group A (n= 716)
Singular Ct infection
Group B (n= 287)
HPV and Ct co-infection

Table 1. Patient's sociodemographic anamnestic, clinical characteristics at enrolment time.

No. of total enrolled patients	1,003		
	Group A	*Group B*	*p*
Enrolled patients	716	287	
Median age, yr (SD)*	34.9 (7.2)	34.1 (6.8)	0.10
Ct plasmidic DNA positive, no. (%)	224 (31.2)	83 (28.9)	0.49
Ct secretory IgA positive, no. (%)	125 (17.4)	51 (17.8)	0.92
Both Ct plasmidic DNA and secretory IgA positivities, no. (%)	367 (54.4)	153 (53.3)	0.57
Ct serum IgA positive, no. (%)	102 (14.4)	39 (13.7)	0.84
Ct serum IgG positive, no. (%)	501 (69.9)	200 (69.6)	0.93
Both Ct serum IgA and IgG positive, no. (%)	113 (15.7)	48 (16.7)	0.70
HPV DNA positive, no. (%)	-	287 (100)	-
Educational level			
Primary school	-	-	
Secondary school	488 (68.1)	191 (66.5)	0.65
Post-secondary education	228 (31.9)	96 (33.4)	
Sexually active (past month)	714 (99.7)	281 (97.9)	0.41
Sexual behavior			
1 partner	596/714 (83.4)	231/281 (80.7)	0.26
>1 partners	118/714 (16.6)	56/281 (19.3)	
Contraceptive use	467/714 (65.4)	184/281 (64.7)	
Condom	317/467 (67.8)	125/184 (67.9)	0.98
Coitus interruptus	150/467 (32.2)	59/184 (32.1)	

Table 3. Semen parameters analysis according to the Groups.

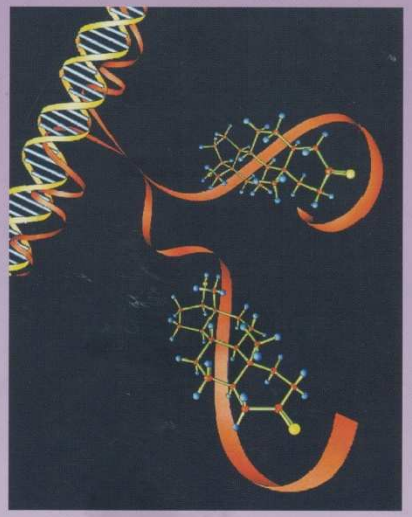
	Group A	Group B	*p*	*Normal parameters value*
Volume	3.9 (±3.3)	3.6 (±2.9)	0.17	2.0-5.0 ml
pH	7.3 (±1.9)	7.5 (±1.8)	0.12	7.2 to 7.8
Sperm concentration	19.9 (±17.2)	20.1 (±18.1)	0.86	20 x 10^6 per ml or more
Motility	58.1 (±18.1)	44.2 (±12.9)	<0.001	50% or more with forward progression or 25% or more with rapid linear progression within 60 min after collection
Morphology	41.2 (±21.1)	30.2 (±23.8)	<0.001	50% or more with normal morphology

Table 4. Univariate and multivariate analysis results of factors affecting subfertile status.

Categories (variables)	Univariate analysis (*p*)	Multivariate analysis (*p*)
Age	0.13	0.12
Educational level	0.31	0.09
Sexual behaviour	0.46	0.13
Contraceptive use	0.08	0.09
Positivity to Chlamydia trachomatis	0.07	0.1
Positivity to Chlamydia trachomatis and HPV co-infection	0.001	0.001

Considerazioni…

- In definitiva la diagnostica convenzionale non sembra in grado di fornire dati certi per la programmazione di un trattamento efficace.



Further Insights into Endocrine Disease

The Enigma of Prostatitis

K.G. NABER, B. LOBEL, W. WEIDNER, F. ALGABA,
D. PREZIOSO, L.J. DENIS & K. GRIFFITHS

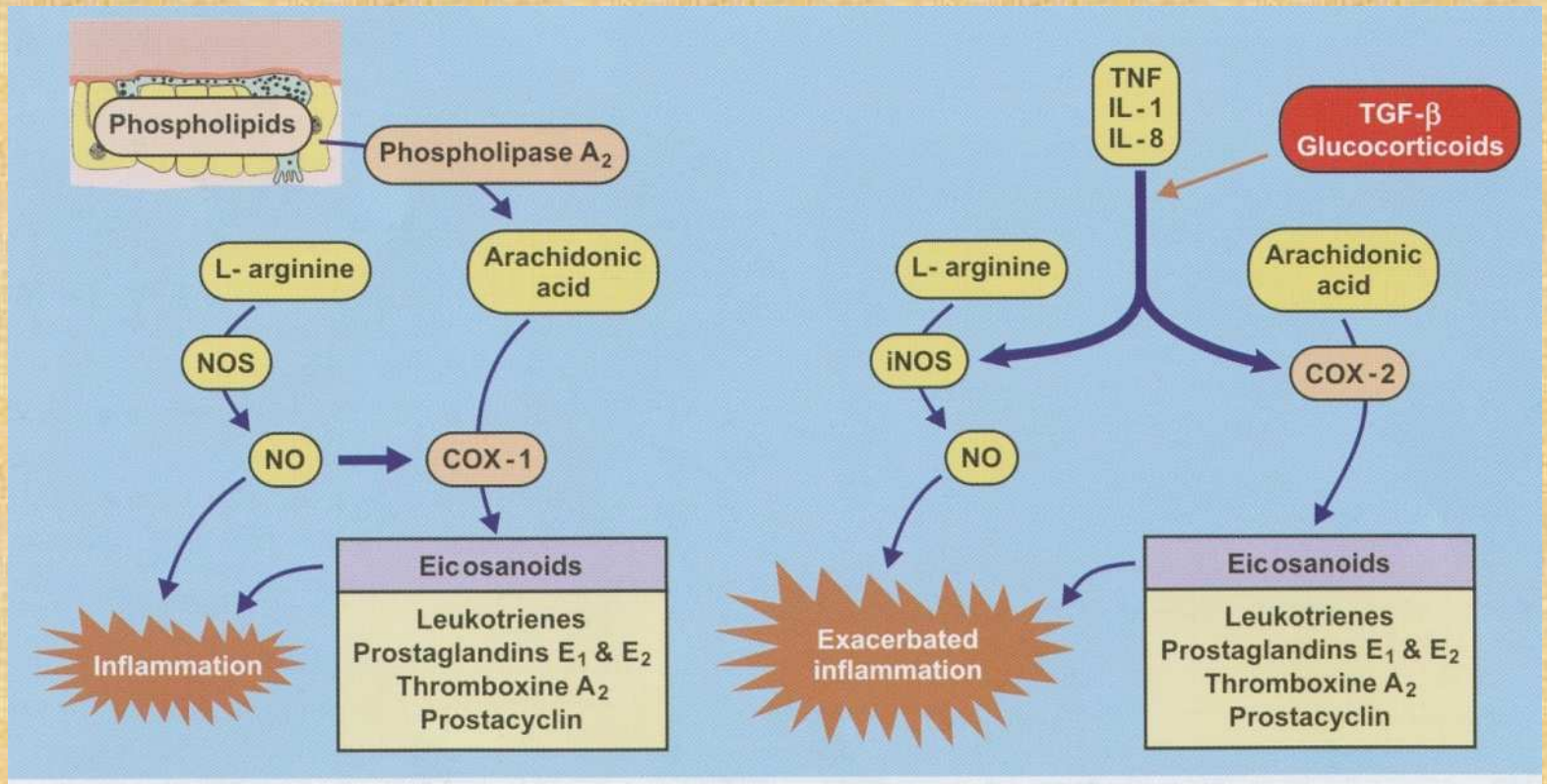
An IPHC Teaching Programme:

St.Malo 2004

Teorie etiopatogenetiche…

- Teoria Neurogena
- Teoria Tensiogena
- Teoria Immunologica

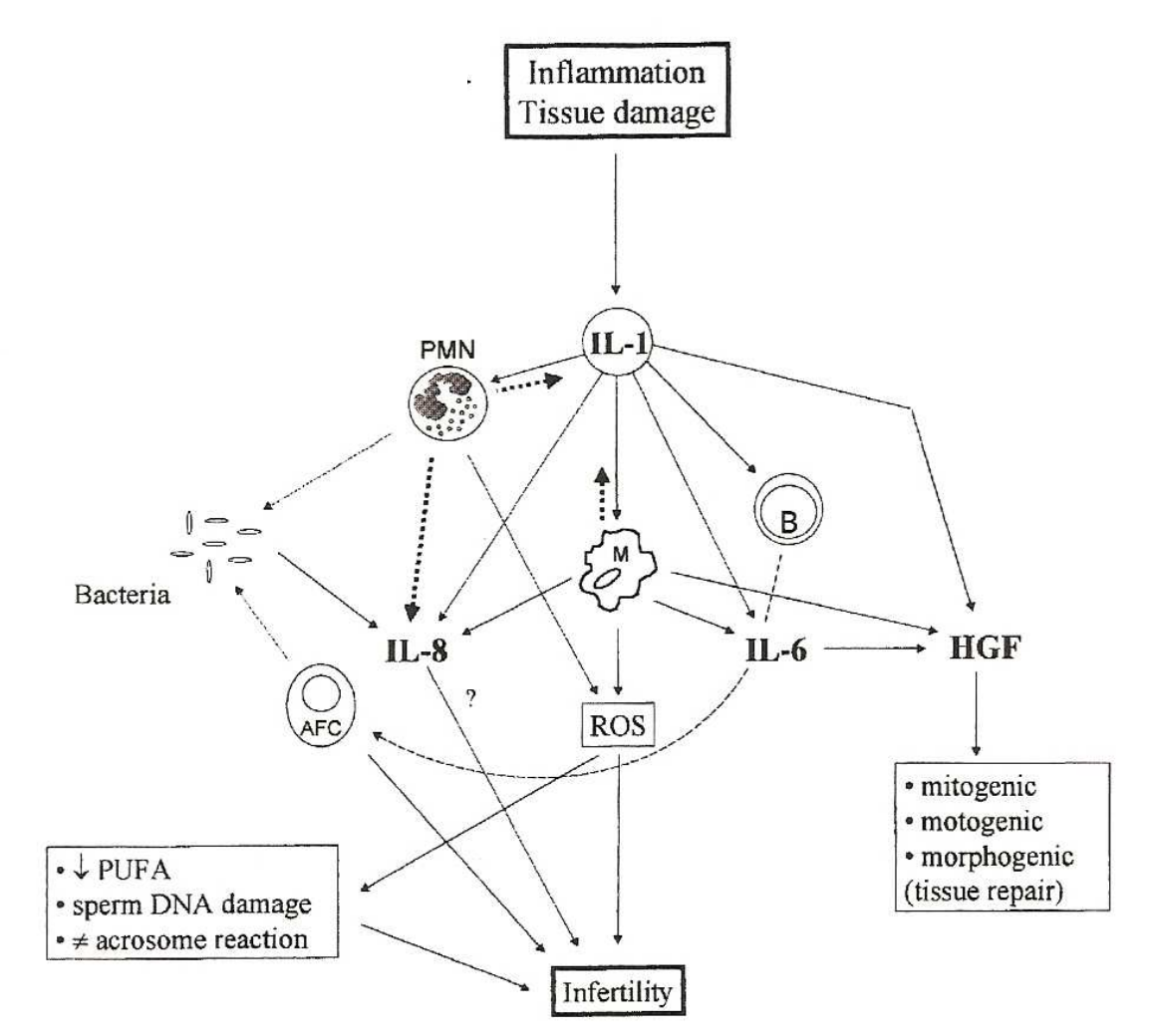
Teoria immunologica…



From: The enigma of prostatitis.

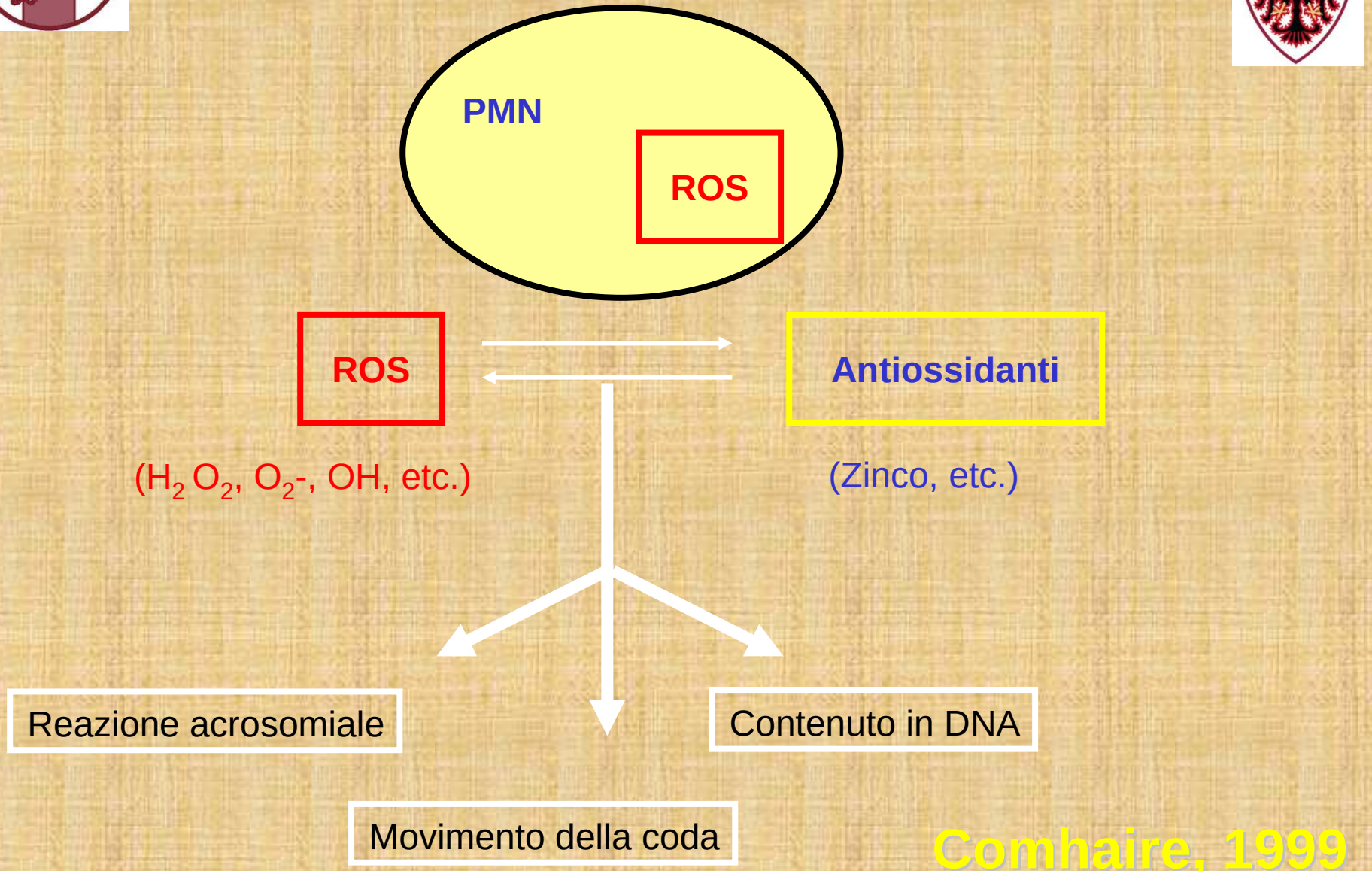
IPHC 2004

leucociti e citochine…



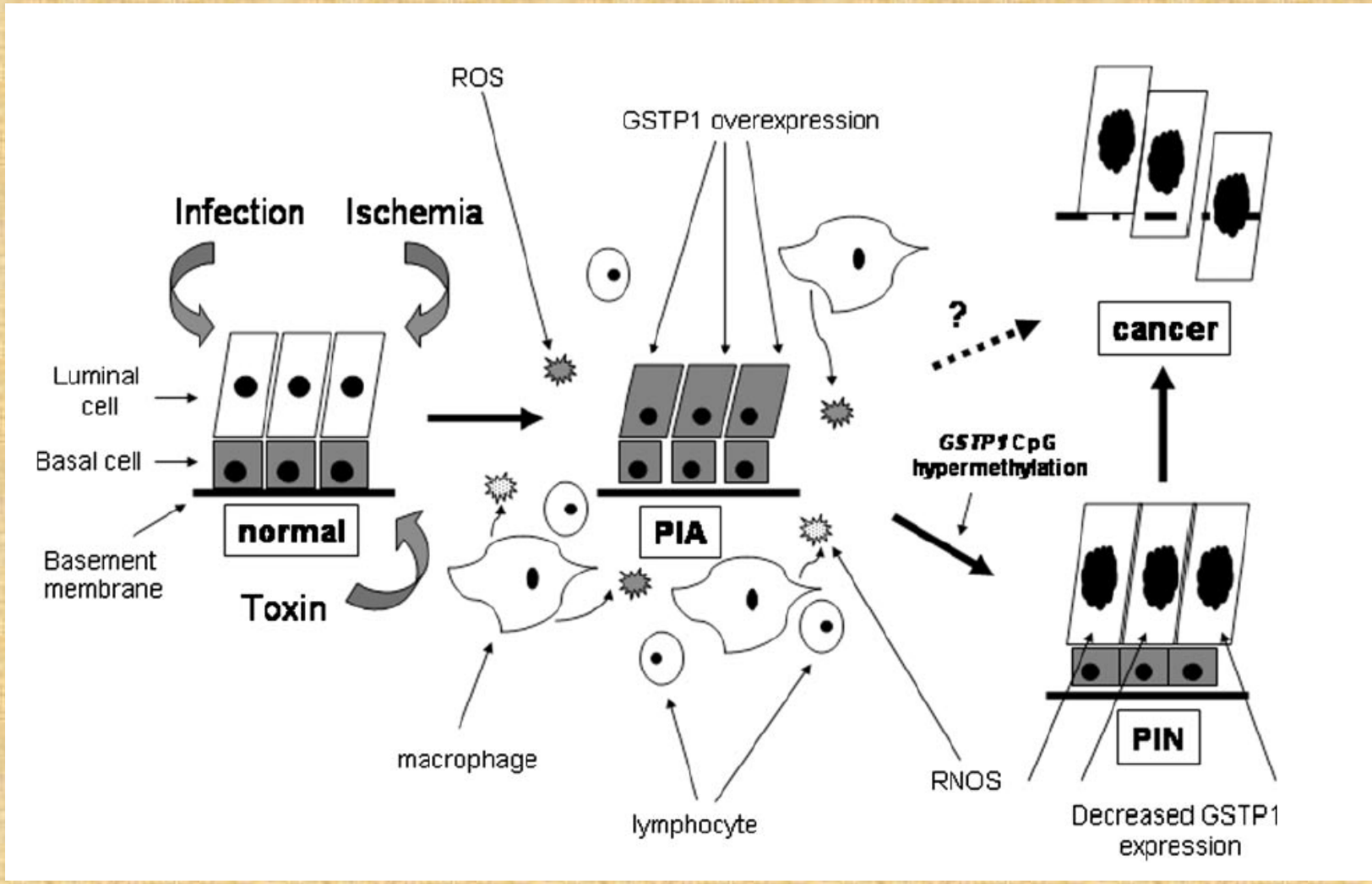
Comhaire, 1999

Reactive Oxygen Species



Comhaire, 1999

Dalla prostatite a…



Carcinogenesis 2004; 26: 1170-81

Considerazioni…

- Valutazione del sistema immunitario nella genesi e nel mantenimento della flogosi prostatica:
  - *Quali marcatori?*

EUROPEAN UROLOGY 51 (2007) 524–533

available at www.sciencedirect.com
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European Association of Urology

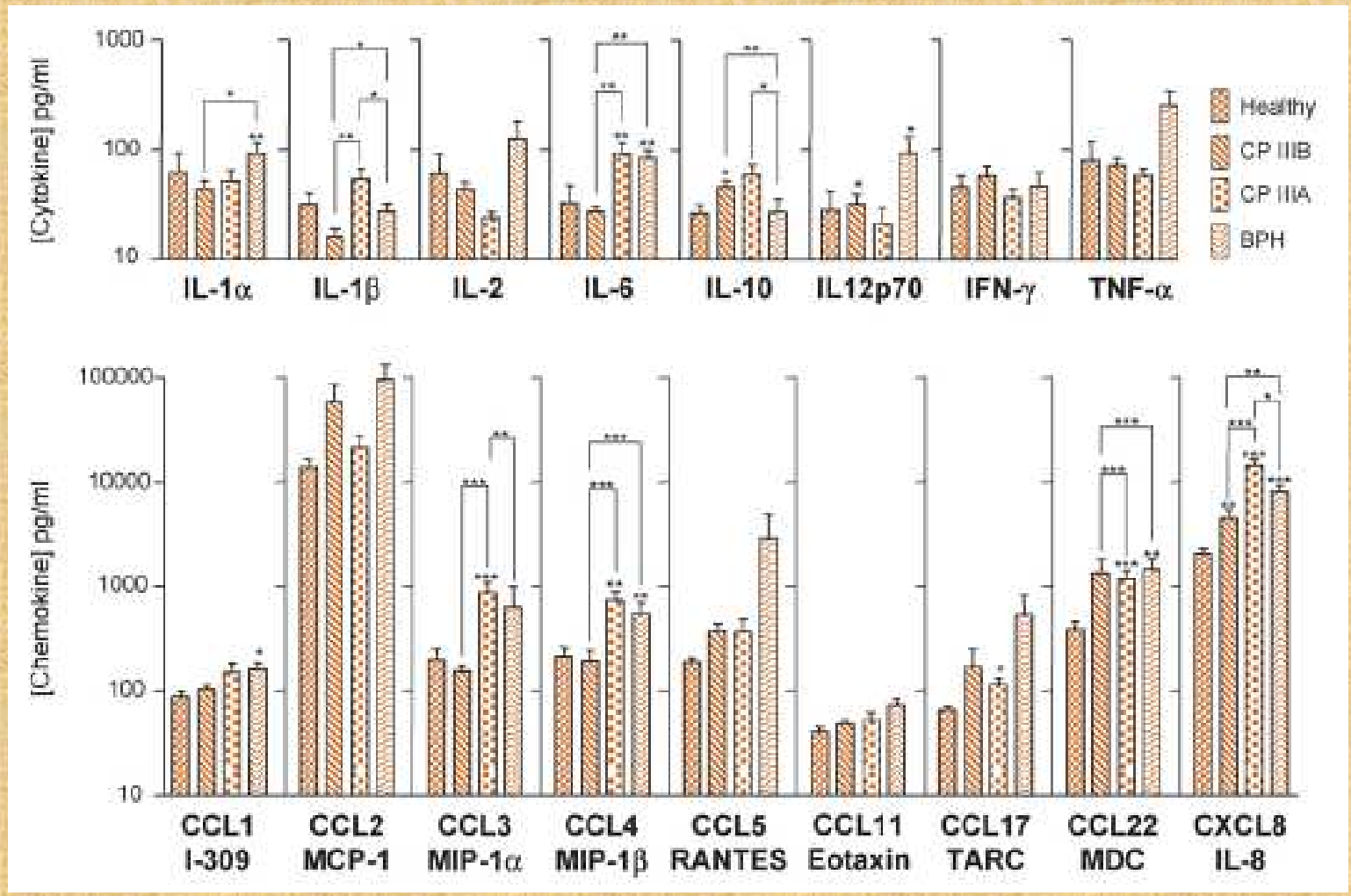
Infections

Seminal Plasma Cytokines and Chemokines in Prostate Inflammation: Interleukin 8 as a Predictive Biomarker in Chronic Prostatitis/Chronic Pelvic Pain Syndrome and Benign Prostatic Hyperplasia☆

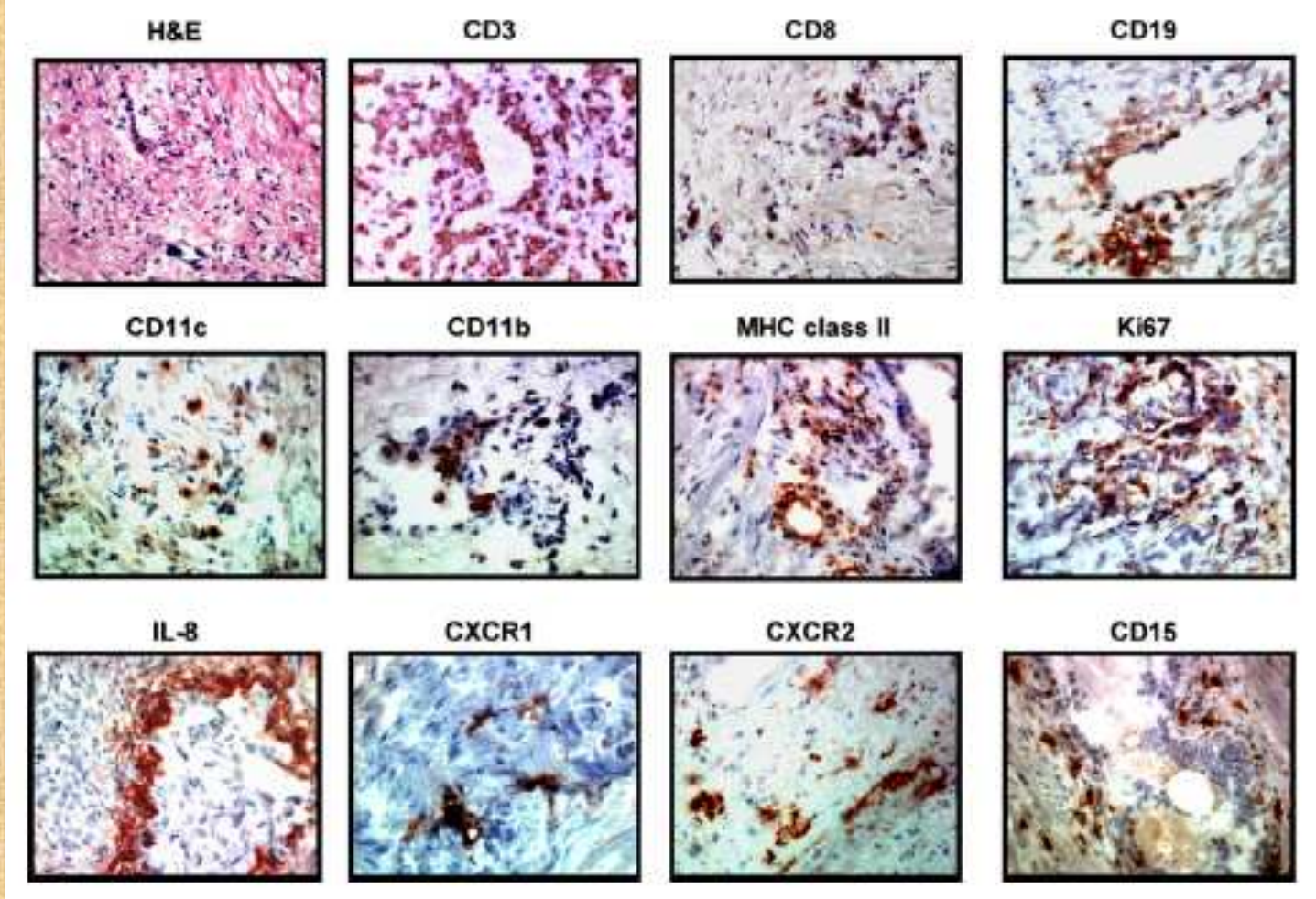
Giuseppe Penna[a,1], *Nicola Mondaini*[b,1], *Susana Amuchastegui*[a], *Selene Degli Innocenti*[c], *Marco Carini*[b], *Gianluca Giubilei*[b], *Benedetta Fibbi*[a,c], *Enrico Colli*[a], *Mario Maggi*[c], *Luciano Adorini*[a,*]

[a] BioXell, Milan, Italy
[b] Department of Urology, University of Florence, Florence, Italy
[c] Andrology Unit, Department of Clinical Physiopathology, University of Florence, Florence, Italy

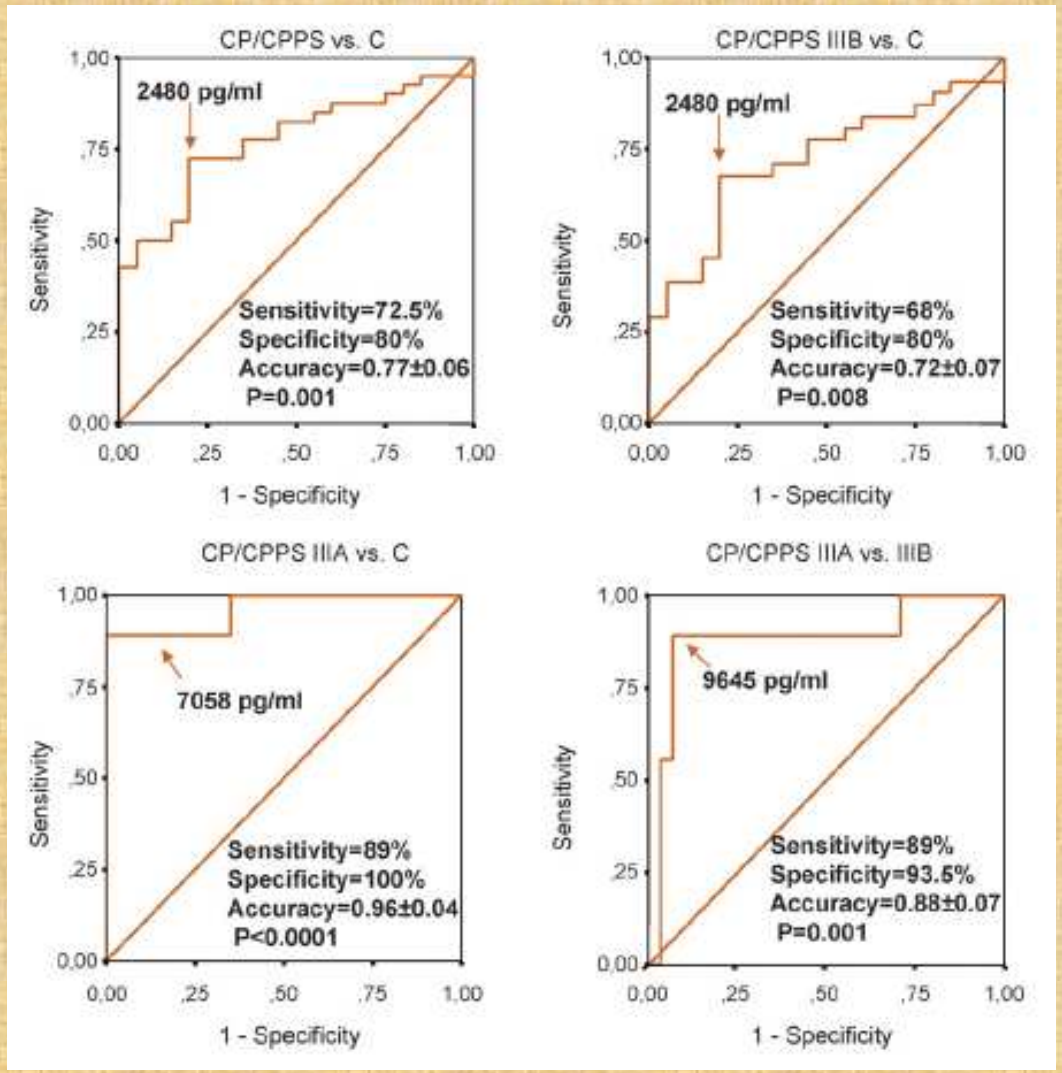
Livelli di citochine nel liquido seminale di pazienti con prostatite e IPB



Produzione di IL-8 e richiamo di cellule infiammatorie nel tessuto prostatico



Valore predittivo di IL-8 nella diagnosi di CP/CPPS

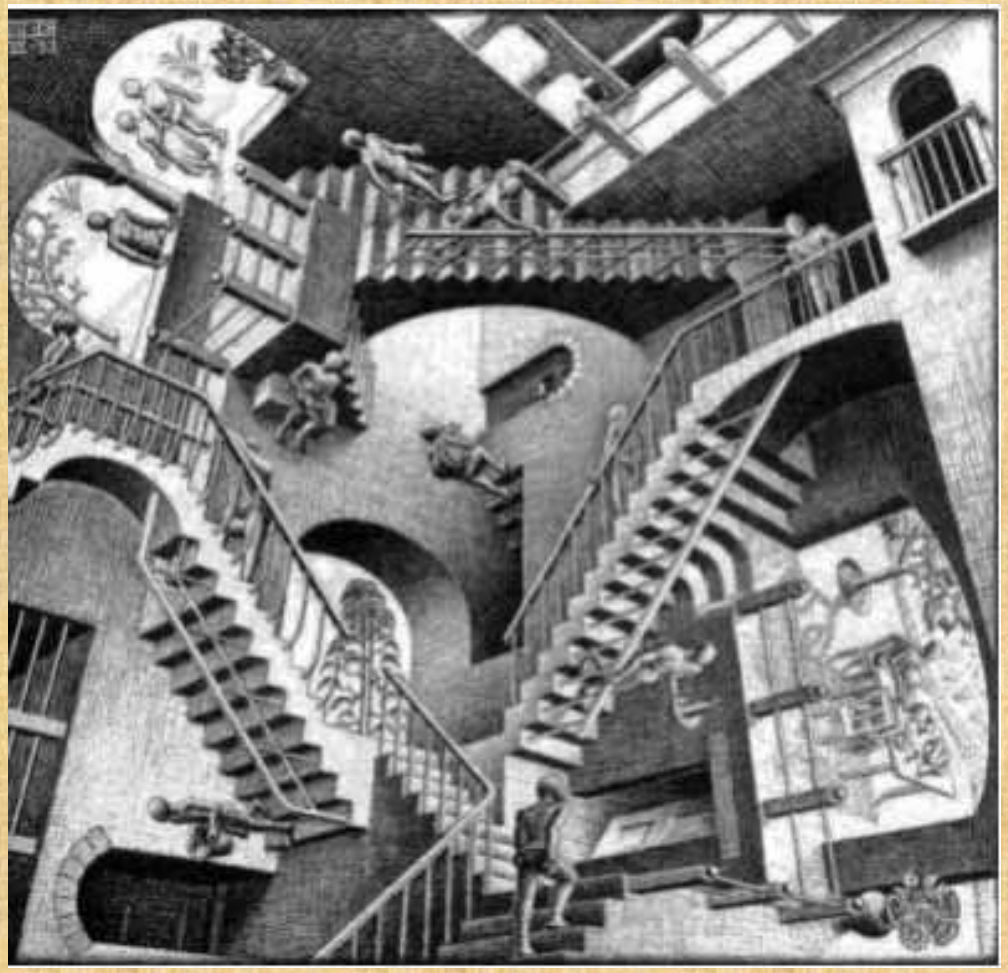


…quale ruolo dei marcatori…

Ruolo dell'attivazione del sistema immune nella fisiopatologia della CP/CPPS

Il dosaggio della IL-8 seminale, segnatamente per quanto riguarda gli antigeni di Chlamydia trachomatis, sembra rappresentare ad oggi il miglior marcatore di **malattia infiammatoria prostatica**

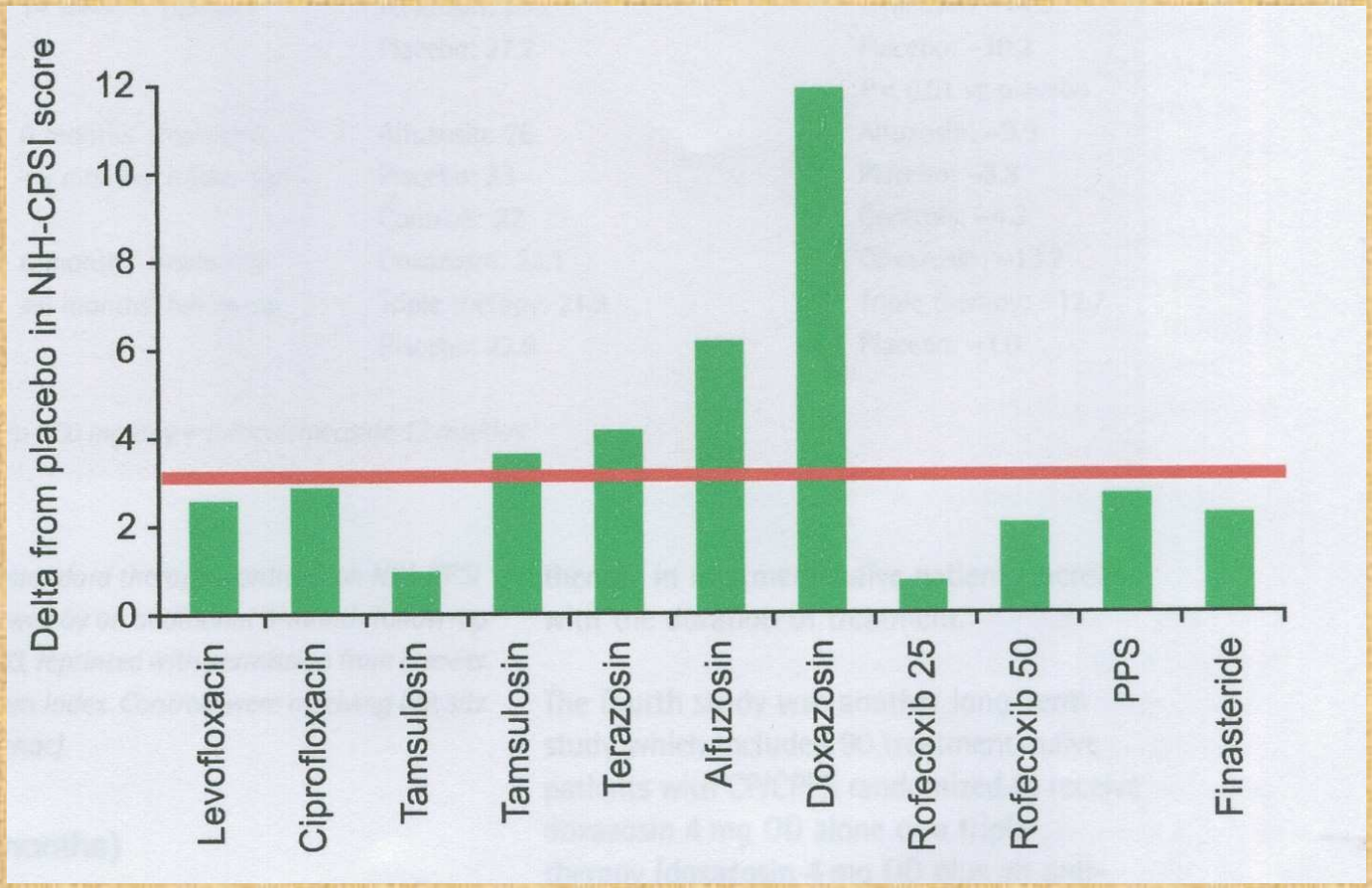
Terapia…
nuove evidenze, nuove domande



M.C.Escher : Relatività

Agents used for the treatment of chronic prostatitis / pelvic pain syndrome

- Antimicrobials, such as fluoroquinolones
- Intraprostatic gentamicin - xylocain
- Alpha - blockers
- Antimicrobials in combination with an alphablocker
- Muscle relaxants, such as Valium or Baclofen
- Anticholinergic drugs
- Non - steroid antirheumatic agents
- Analgesics, including centrally effective drugs
- Amitryptilin
- Na - tartrate
- Allopurinol
- Low dosage oestrogen
- Finasteride
- Prostatilen
- Phytotherapy, such as z.B. Cernilton, Prostabrit
- Wobenzym
- Botulinum - toxin
- Phonophoresis with Methyluracil
- TCM suppositories
- Mepartricin



C.Nickel BJU 2008

Immunomodulatory effects of quinolones

Axel Dalhoff and Itamar Shalit

THE LANCET vol.3 June 2003

- I fluorchinoloni in generale inducono sintesi in vitro di IL-2 inibendo IL-1 eTNF-alfa
- I meccanismi che possono spiegare tali effetti sono:
  - effetto intracellulare su cAMP e fosfodiesterasi
  - effetto su fattori di trascrizione come Nuclear Factor B, IL-6 e T cells attivate
  - effetto “triggering” sull’equivalente eucariotico della risposta batterica SOS con i suoi conseguenti effetti intracellulari

Contents lists available at ScienceDirect

International Journal of Antimicrobial Agents

journal homepage: http://www.elsevier.com/locate/ijantimicag

Serenoa repens associated with *Urtica dioica* (ProstaMEV®) and curcumin and quercitin (FlogMEV®) extracts are able to improve the efficacy of prulifloxacin in bacterial prostatitis patients: results from a prospective randomised study

Tommaso Cai[a,*], Sandra Mazzoli[b], Adriano Bechi[b], Patrizia Addonisio[b], Nicola Mondaini[a], Roberto Castricchi Pagliai[b], Riccardo Bartoletti[a]

[a] Department of Urology, University of Florence, via dell'Antella 58, 50011 Florence, Italy
[b] Sexually Transmitted Diseases Centre, Santa Maria Annunziata Hospital, Florence, Italy

Table 1
Clinical and laboratory characteristics of patient at enrolment (N = 143).

	Group A	Group B
No. of patients	106	37
Median age (±S.D.) (years)	30.8 (5.60)	31.9 (6.19)
Sexually active (past month)	106 (100)	37 (100)
Sexual behaviour		
1 partner	52 (49.1)	20 (54.1)
>1 partner	54 (50.9)	17 (45.9)
Contraceptive methods		
No contraceptive methods	48 (45.3)	14 (37.8)
Condom	49 (46.2)	13 (35.1)
Coitus interruptus	9 (8.5)	10 (27.0)
Spermicide	–	–
Clinical data		
Clinical presentation		
Urinary symptoms	103 (97.2)	37 (100)
Burning	68 (66.0)	24 (64.9)
Tenesmus	22 (21.4)	13 (35.1)
Painful micturition	74 (71.8)	33 (89.2)
Dysuria + frequency	49 (47.6)	34 (91.9)
Urgency	29 (28.2)	9 (24.3)
Pain	40 (37.7)	27 (73.0)
Perineal	16 (40.0)	8 (29.6)
Scrotal	2 (5.0)	–
Suprapubic	12 (30.0)	12 (44.4)
Lower abdominal	10 (25.0)	7 (25.9)
Start of CBP history (months)	20.71 ± 5.05	22.62 ± 6.19
Symptoms score at baseline (±S.D.)		
NIH-CPSI	19.67 ± 4.71	20.70 ± 3.35
IPSS	17.37 ± 2.58	17.97 ± 3.15
Laboratory data		
Positive Meares–Stamey test	106 (100)	37 (100)
Gram-positive bacteria	69 (65.1)	19 (51.4)
Enterococcus spp.	62 (89.9)	12 (63.2)
Streptococcus B group	12 (17.4)	6 (31.6)
Staphylococcus saprophyticus	18 (26.1)	9 (47.4)
Gram-negative bacteria	37 (34.9)	18 (48.6)
Escherichia coli	33 (89.2)	16 (88.9)
Klebsiella spp.	6 (16.2)	3 (16.7)
Proteus mirabilis	1 (2.7)	2 (11.1)
Serratia spp.	8 (21.6)	5 (27.8)
Enterobacter spp.	10 (27.0)	12 (66.7)

S.D., standard deviation; CBP, chronic bacterial prostatitis; NIH-CPSI, National Institutes of Health Chronic Prostatitis Symptom Index; IPSS, International Prostatic Symptom Score.

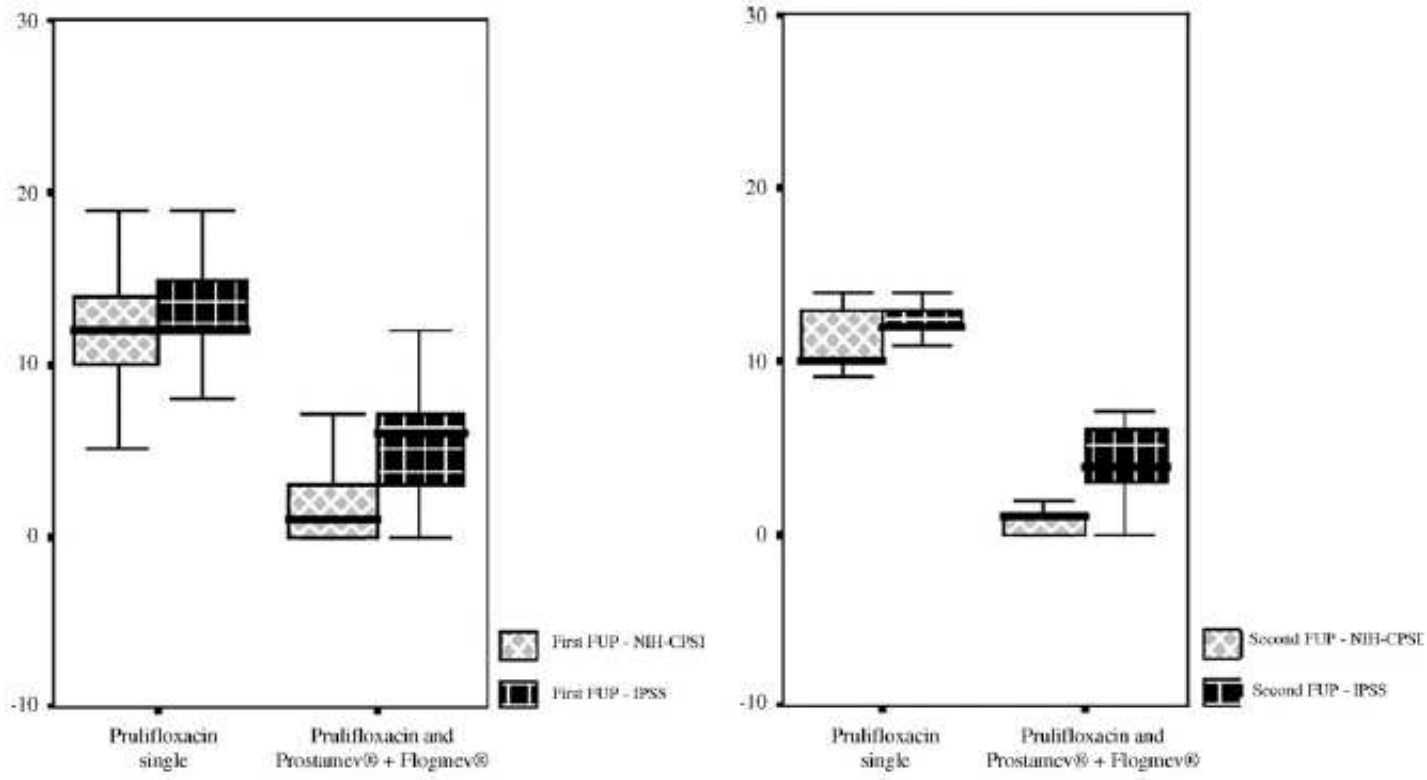


Fig. 1. Mean questionnaire results according to treatment groups and different follow-up (FUP) examinations. NIH-CPSI, National Institutes of Health Chronic Prostatitis Symptom Index; IPSS, International Prostatic Symptom Score.

Methods and Findings in Experimental and Clinical Pharmacology 2010, 32(1): ???-???
THOMSON REUTERS

CCC: 0379-0355/2010
DOI: 10.1358/mf.2010.32.1.1423885

ORIGINAL ARTICLE

CLINICAL AND MICROBIOLOGICAL EFFICACY OF PRULIFLOXACIN FOR THE TREATMENT OF CHRONIC BACTERIAL PROSTATITIS DUE TO CHLAMYDIA TRACHOMATIS INFECTION: RESULTS FROM A PROSPECTIVE, RANDOMIZED AND OPEN-LABEL STUDY

T. Cai[1,2], S. Mazzoli[3], P. Addonisio[3], V. Boddi[4], P. Geppetti[1] and R. Bartoletti[2]

[1]Department of Critical Care Medicine and Surgery, Clinical Pharmacology Unit, University of Florence ; [2]Department of Critical Care Medicine and Surgery, Urology Unit, University of Florence; [3]STD Centre, Santa Maria Annunziata Hospital, Florence; [4]Department of Public Health, University of Florence, Italy

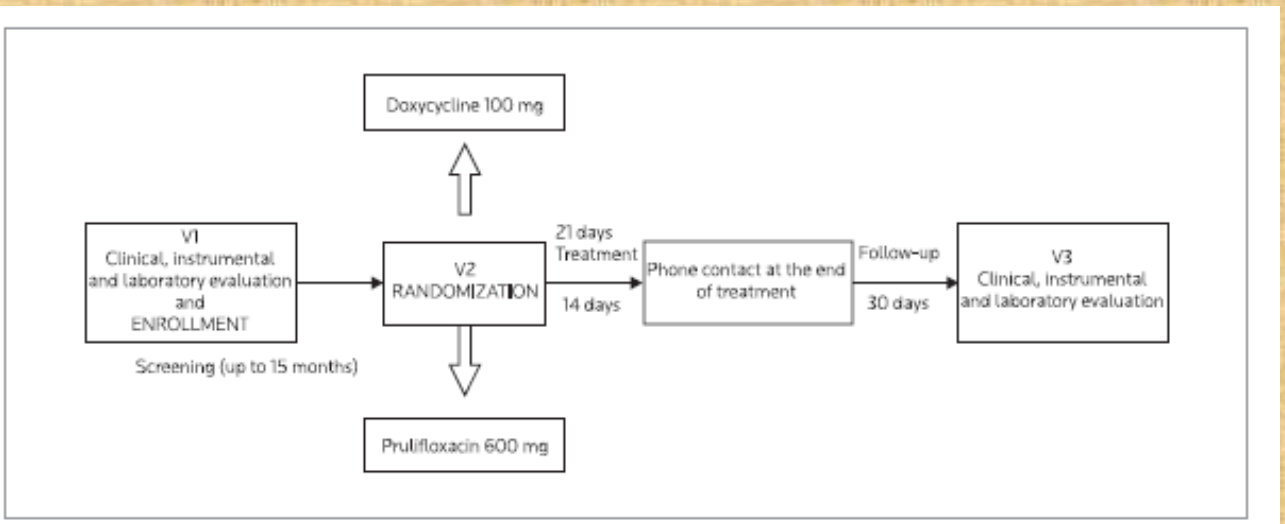


Figure 1. Study design and treatment schedule.

Table II. Clinical and laboratory data at enrollment and follow-up (all enrolled patients).

	Prulifloxacin		Doxycycline	
	V1*	V3#	V1*	V3#
Patients with symptoms	109 (100)	19 (17.4)	102 (100)	21 (20.4)
Symptoms score (mean) (range) NIH-CPSI§	15.61 (13-26)	6.1 (0-12)	14.91 (13-26)	6.6 (0-12)
Ct† markers - No. (%) Urine and seminal plasma				
Ct† plasmidic DNA positive only	-	-	-	-
Ct† secretory IgA positive only	89 (81.7)	57 (52.3)	84 (82.3)	60 (58.8)
Both Ct† plasmidic DNA and secretory IgA positive	20 (18.3)	-	18 (17.6)	2 (1.9)
Ct† secretory IgA levels (mean)	10.4	6.5	10.6	8.9
Serum				
Ct† serum IgA positive only	35 (32.1)	28 (25.6)	34 (33.3)	27 (26.4)
Ct† serum IgG positive only	27 (24.7)	28 (25.6)	21 (20.5)	21 (20.5)
Both Ct† serum IgA and IgG positive	14 (12.8)	10 (9.1)	12 (11.7)	9 (8.8)
IL-8° (seminal plasma) (pg/ml)				
Patients with IL-8 > 31.2 pg/ml	81 (74.3)	57 (52.2)	79 (77.4)	62 (60.7)
Mean levels (range)	712 (568-1200)	312 (132-680)	738 (568-1200)	512 (132-680)

V1*, enrollment visit; V3#, follow-up visit; NIH-CPSI§, Italian version of National Institute of Health - Chronic Prostatitis Symptom Index; Ct†, *Chlamydia trachomatis*; IL-8°, Interleukin 8.

SUMMARY

The purpose of this study was to compare the efficacy of a 14-day course of prulifloxacin 600 mg with standard antibiotic therapy for the treatment of chronic prostatitis due to Chlamydia trachomatis (Ct) infection. All patients with clinical and instrumental diagnosis of bacterial chronic prostatitis (CP) due to Ct infection were enrolled. After randomization, all patients were administered oral prulifloxacin 600 mg once daily for 14 days or doxycycline 100 mg orally twice daily for 21 days. At enrollment and 30 days after beginning treatment, all patients underwent microbiological cultures for uropathogens bacteria and yeasts, DNA extraction and mucosal IgA evaluation for Ct diagnosis, seminal plasma IL-8 evaluation and serum IgA and IgG anti-Ct analysis. The National Institutes of Health - Chronic Prostatitis Symptom Index (NIH-CPSI) was given to each patient. A total of 109 patients received prulifloxacin and 102 received standard therapy. Prulifloxacin had clinical efficacy rates equivalent to standard therapy (82.5% vs. 79.9%) (P = 0.08) and showed superior microbiological efficacy rates compared to standard therapy, in terms of decreasing mucosal IgA (P <0.001) and IL-8 levels (P < 0.001). Prulifloxacin was also equivalent to standard therapy for clinical success, as demonstrated by a decrease in the number of patients affected by CP due to Ct infection.

Considerazioni…

- Dati recenti confermano la possibilità di ottenere informazioni relative all'effettiva guarigione mediante impiego di marcatori molecolari quali IL-8.
- In questi pazienti IL-8 subisce un decremento significativo dopo trattamento con prulifloxacina.
- Ciò giustifica l'impiego frequente di fluorchinoloni anche nelle prostatiti non batteriche

…take home message…

obiettivo: *qualità di vita del paziente*


QUALE E'
LA COSA CHE FACCIO
CHE TI ECCITA
DI PIU'?
IL CAFFE'!

Grazie per l’attenzione