

(CP)

(PTCA)

*

	(PTCA)		PTCA
IgG	6	92	
	%45	% 8.9±67	6
	% 10.8±39	% 11.8±39	PTCA
	%12±12% %16±11		
	(P=0.655)		
	(P=0.834)		
		PTCA	
		PTCA	

*

(CP)

(PTCA)

Previous Chlamydia Pneumoniae Infection and the Restenosis After Percutaneous Transluminal Coronary Balloon Angioplasty (PTCA)

M. Alwazze^{*}

Abstract

The aim of this study is to investigate the potential role of previous Chlamydia Pneumoniae Infection on restenosis rate after Percutaneous Transluminal Coronary balloon angioplasty.

The study included ninety-two patients who had been admitted for control angiography after PTCA within a mean interval of 6 months. Anti-Chlamydia Pneumoniae antibodies (CP-IgG) were measured as an indicator of previous Chlamydia Pneumoniae Infection and latency. We analyzed quantitatively the coronary angiograms before PTCA, directly after PTCA, and 6 months later. CP-IgG seropositivity was established in 45% of patients. The degree of restenosis before PTCA was $69\pm 9.7\%$ of seropositive group versus $67\pm 8.9\%$ of seronegative group. PTCA resulted in a residual stenosis of $39\pm 10.8\%$ in seropositive group versus $39\pm 11.8\%$ of seronegative group. The late losses of luminal diameter after 6 months in the CP-positive and -negative groups were $12\pm 12\%$ and $11\pm 16\%$ respectively ($P=0.655$). The CP-serostatus (CP-IgG) was not significantly associated with restenosis ($P=0.834$).

Our data didn't confirm the relationship between prior Chlamydia Pneumoniae Infection and restenosis after PTCA. The results didn't support the use of antibiotics before or after PTCA to reduce the restenosis after PTCA.

Key words: Chlamydia ▪ restenosis ▪ angioplasty

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Doxycycline

(1)

Roxithromycin

(PTCA)

Lasorablation

(6,7,8,9)

Atherectomy ()

(PTCA)

Chlamydia

Pneumoniae (CP)

(2,3)

.(PTCA)

:

:

92

PTCA

-

(4,5)

(CP)

(PTCA)

CP

35

80

PTCA

420

12

:

PTCA

≤

0.2

PTCA

PTCA

PTCA

(Cardio 500 System,
Kontron Electronic GmbH,
Eching)

PTCA

Chlamydia Pneumoniae (CP)

:

Stent

75 -

Chlamydia

Chlamydia Pneumonia (CP)

Pneumonia (CP) CP-

IgG

: Enzyme-linked immunosorbent assay (ELISA)

:

Medac, Hamburg, Germany

118

CP-

PTCA

100

IgG

92

AU/ml

(30 62)

420

:

SPSS-Version

12.0.1

CP-IgG

%45

Chi-Quadrat-Test

5

%44

,Fisher-exact test

1

1

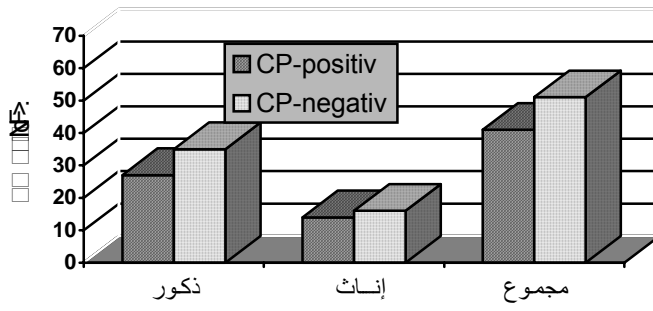
t

(CP)

(PTCA)

.1

CP-neg.	CP-pos.	:
51	41	
35	27	
16	14	
59 ± 9.4 (36-77)	63 ± 7.9 (43-77)	()



.1

:

)

(..

2

2

70

PTCA

6

PTCA

% 8.9±67

%9.7

±69

:

2.67±0.75

3

2.68±0.76

PTCA

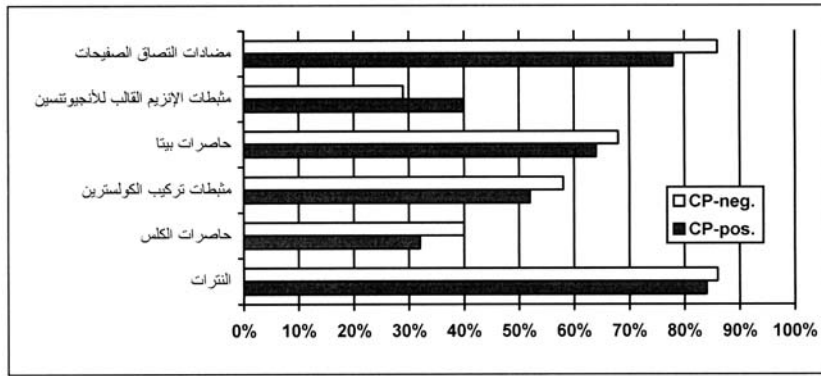
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.2

<i>P-value</i>	CP-neg.	CP-pos.		
0.245	187 ±52.2	182 ±63.5	()	PTCA
0.479	49	54		%
0.556	26.6 ±3.61	26.8 ±3.82		(² /)
0.670	44	47		%
0.243	159.4±56.3	152 ±36.8	(. /) LDL	
1.000	20	20		%
0.457	65	69		%
0.384	86	90		%
0.239	40	32		%
0.572	53	49		%
0.558	65	61		%
0.241	33	41		%
0.067	82	71		%

(CP)

(PTCA)



.2

$\%16 \pm 11$

$\%28$

$\%30$

$\%51$

$\%49$

$\%10.8 \pm 39$

$\%11.8 \pm 39$

.(3)

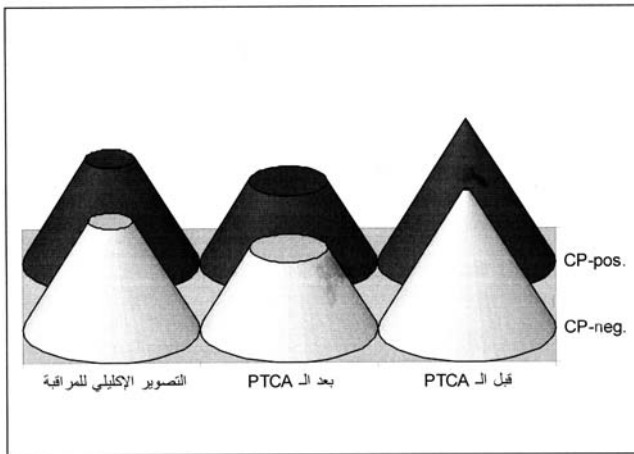
6

$\%12 \pm 12$

.3

<i>P-Value</i>	CP-neg.	CP-pos.	
			PTCA
0.334	67 ±8.9	69 ±9.7	[%]
0.898	2.68±0.76	2.67±0.75	reference diameter ()
			PTCA
0.910	39 ±11.8	39 ±10.8	[%]
0.524	2.78±0.75	2.74±0.65	reference diameter ()
0.612	52 ±14.4	50 ±13.5	[%]
0.890	2.72±0.77	2.70±0.69	reference diameter ()
0.935	30 ±10	30 ±15	[%] early gain
0.285	17 ±12	20 ±16	[%] effective gain
0.655	11 ±16	12 ±12	[%] late loss
0.844	37 ±50	39 ±48	[%] loss ratio

.3

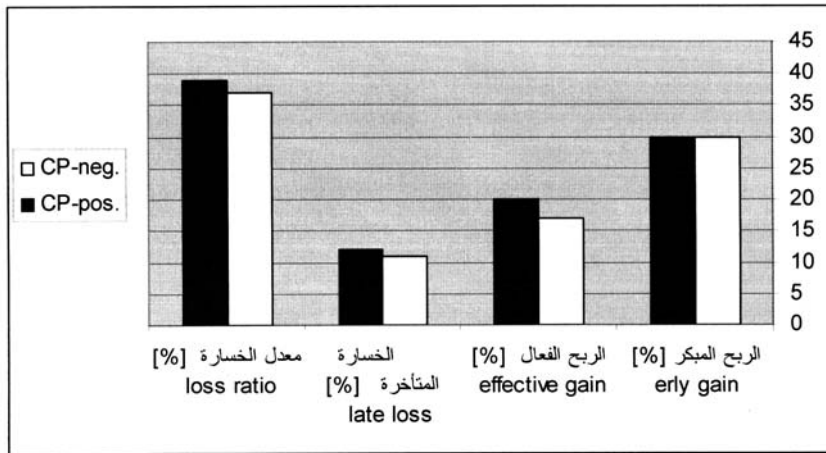


.3

(CP)

(PTCA)

(%51) 26
20 10%
(%49) %50
()
(P=0.834)



.4

%50 :

Stenose

(10)

%50

ratio

(PTCA) %42 %30 6-4

(11,12,13)

(1,10) %50 10%

Early gain

PTCA

PTCA

Late loss

PTCA

PCR Effective gain (or net gain)

endatherectomy Loss PTCA

%32

(CP)

(PTCA)

(5)

(4)

%30

6-4

PTCA

(14)

(17)

)

Doxycycline
(Roxithromycin

(15)

PTCA

(16)

(6,7,8,9)

78

92

IgG

(PTCA)

.
%16±11
%12±12
(P=0.655)
%45 %44
(18,19)
(%51) 26
(%49) 20 6
PTCA
(P=0.834)
PTCA
%9.7±69
(2) % 8.9±67
(5,20) PTCA % 10.8±39
% 11.8±39

(CP)

(PTCA)

Stent

(19,21,22,23)

PTCA

PTCA

Hayashida K at

al

IgG

apoptosis

(24,25)

PTCA

Stent

PTCA

)

%50

(

PTCA

- 1-Strauer, B. E.: Interventionelle Verfahren in der Kardiologie. *Der Internist* 38: 1-2 (1997).
- 2- Carlsson J, Miketic S, Brom J. Prior cytomegalovirus, Chlamydia pneumoniae or Helicobacter pylori infection and the risk of restenosis after percutaneous transluminal coronary angioplasty. *Int J Cardiol.* 2000 Apr 28;73(2):165-71.
- 3-Kruk M, Przulski J, Deptuch TW. Influence of Chlamydia pneumoniae and cytomegalovirus infections on prevalence and the course of coronary artery disease. *Pol Arch Med Wewn.* 2001 Jan;105(1):39-44. Polish.
- 4- Radke PW, Merkelbach-Bruse S, Messmer BJ. Infectious agents in coronary lesions obtained by endatherectomy: pattern of distribution, coinfection, and clinical findings. *Coron Artery Dis.* 2001 Feb;12(1):1-6.
- 5-Hayashida K, Tanaka M, Morita H. Chlamydia pneumoniae seropositivity predicts the risk of restenosis after percutaneous transluminal coronary angioplasty. *Heart Vessels.* 2002 May;16(4):137-45.
- 6- Kannengiesser M, Kaltenbach M, Stille W. Influence of doxycycline on clinical and angiographic outcome following percutaneous coronary intervention. *J Interv Cardiol.* 2004 Dec;17(6):447-53.
- 7- Neumann F, Kastrati A, Miethke T. Treatment of Chlamydia pneumoniae infection with roxithromycin and effect on neointima proliferation after coronary stent placement (ISAR-3): a randomised, double-blind, placebo-controlled trial. *Lancet.* 2001 Jun 30;357(9274):2085-9.
- 8- Cannon CP, Braunwald E, McCabe CH. Pravastatin or Atorvastatin Evaluation and Infection Therapy-Thrombolysis in Myocardial Infarction 22 Investigators. Antibiotic treatment of Chlamydia pneumoniae after acute coronary syndrome. *N Engl J Med.* 2005 Apr 21;352(16):1646-54.
- 9- Vandoni P, Morelli B, Lazzati L. Effect of a short antibiotic treatment with roxithromycin on circulating adhesion molecules after coronary stenting: a single-center pilot trial. *Ital Heart J.* 2004 Sep;5(9):667-72.
- 10- Höfling, B., Gonschior, P., Esin, S. Das Problem der Restenose nach Angioplastie. *Der Internist* 1:31- 43 (1997).

-
- 11- Gruentzig, A. R., King, S. B., Schlumpf, M. Long-term follow-up after percutaneous transluminal coronary angioplasty. The early Zurich experience *New Engl. J. Med* 316: 1172-32 (1987).
 - 12- Leimgruber PP, Roubin GS, Hollman J. Restenosis after successful coronary angioplasty in patients with single-vessel disease. *Circulation* 73:710-717 (1986).
 - 13- Serruys PW, Lijten HE, Beatt KJ. Incidence of restenosis after successful coronary angioplasty: a time-related phenomenon. A quantitative angiographic study in 342 consecutive patients at 1, 2, 3, and 4 months. *Circulation* 77:361-371 (1988)
 - 14- Rahel BM, Visseren FL, Suttorp MJ. Cytomegalovirus and Chlamydia pneumoniae as predictors for adverse events and angina pectoris after percutaneous coronary intervention. *Am Heart J.* 2004 Oct;148(4):670-5.
 - 15- Zairis MN, Papadaki OA, Psarogianni PK. Serologic markers of persistent Chlamydia pneumonia infection and long-term prognosis after successful coronary stenting. *Am Heart J.* 2003 Dec;146(6):1082-9.
 - 16- Tiran A, Tio RA, Ossewaarde JM. Coronary angioplasty induces rise in Chlamydia pneumoniae-specific antibodies. *J Clin Microbiol.* 1999 Apr;37(4):1013-7.
 - 17- Navarro-Lopez F, Francino A, Serra A. Late T-lymphocyte and monocyte activation in coronary restenosis. Evidence for a persistent inflammatory/immune mechanism? *Rev Esp Cardiol.* 2003 May;56(5):465-72. Spanish.
 - 18- Podsiadly E, Kruk M, Przulski J. Prevalence of chlamydia pneumoniae antibodies in patients with coronary heart disease. *Przegl Epidemiol.* 2001;55(3):253-60. Polish.
 - 19-Carlsson J, Miketic S, Brom J. Prior cytomegalovirus, Chlamydia pneumoniae or Helicobacter pylori infection and the risk of restenosis after percutaneous transluminal coronary angioplasty. *Int J Cardiol.* 2000 Apr 28;73(2):165-71.
 - 20- Tanaka T, Matsushita M, Oka Y. Effect of Chlamydia pneumoniae infection on coronary flow reserve and intimal hyperplasia after stent implantation in patients with angina pectoris. *J Cardiol.* 2001 Dec;38(6):311-7.

- 21- Krausse R, Leiendecker J, Herrmann G. Chlamydia pneumoniae infection and restenosis in patients with coronary heart disease. *Infection* 2003 Jun;31(3):149-54.
- 22- Schiele F, Batur MK, Seronde MF. Cytomegalovirus, Chlamydia pneumoniae, and Helicobacter pylori IgG antibodies and restenosis after stent implantation: an angiographic and intravascular ultrasound study. *Heart*. 2001 Mar;85(3):304-11.
- 23- Mattila KJ, Juvonen JT, Kotamaki MK. Chlamydia pneumoniae and luminal narrowing after coronary angioplasty. *J Intern Med*. 2001 Jul;250(1):67-71.
- 24- Zhou YF, Csako G, Grayston JT. Lack of association of restenosis following coronary angioplasty with elevated C-reactive protein levels or seropositivity to Chlamydia pneumoniae. *Am J Cardiol*. 1999 Sep 1;84(5):595-8, A8.
- 25- Skowasch D, Jabs A, Andrie R. Pathogen burden, inflammation, proliferation and apoptosis in human in-stent restenosis. Tissue characteristics compared to primary atherosclerosis. *J Vasc Res*. 2004 Nov-Dec;41(6):525-34.

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