

# Effectivity of Garlic Extract to Reduce Level of Interleukin-6 Serum and Dialysate in Patients with Continuous Ambulatory Peritoneal Dialysis

Margaretha Kendenan\*

## INTRODUCTION

The Chronic Renal Insufficiency Cohort (CRIC) study showed that 86% of CKD subjects had inflammation. A number of longitudinal studies have reported increased inflammation by measuring interleukin-6 (IL-6) in PD at both systemic and intraperitoneal levels. Garlic and its components have biological activities including anti-inflammatory and antioxidant properties. Anti-inflammatory effect of garlic extract, by inhibiting the activation of pro-inflammatory pathways as well as inhibiting macrophage activation and antioxidant effects and inhibiting pro oxidant enzymes. The purpose of this study is to know the affectivity of garlic extract to reduce IL-6 serum and dialysate in CAPD patients.

**Keywords:** *Garlic extract; interleukin-6 serum; interleukin-6 dialysate; CAPD*

## METHODOLOGY

This study was a crossover randomized placebo controlled double blind trial. The subjects were 20 CKD stage 5 patients using CAPD, randomly divided into 2 groups, namely the group that received 800 mg of garlic extract per day (2x400 mg) for 8 weeks and the group that received a placebo, which was then carried out during a washing period for 2 weeks and then the two groups were crossover. Each group measured the levels of serum IL-6, and IL-6 dialysate before and after treatment.

Table 1. General characteristics of Subjects

	Group		p
	A (n=10)	B (n=10)	
Age	40,4±11,3	43,40±13,36	0,136
Sex			-
Male	9(60%)	6(40%)	
Female	1(20%)	4(80%)	
CAPD (months)	25,3±8,16	46,7±8,83	0,342
CKD (years)	2(2-3)	5(3-14)	0,000
IMT			0,081
Under	1 (100%)	0 (0%)	
Normal	1 (10%)	5 (90%)	
Over	6 (85,71%)	1 (14,28%)	
Obese	2 (33,33%)	4 (66,66%)	
Comorbid			-
Hypertension	5 (50%)	8 (80%)	
DM	2 (20%)	1 (10%)	
GNC	3 (30%)	1 (10%)	

Normality test Shapiro wilk normal data distribution if  $p > 0.05$

Table 2: IL-6 serum and IL-6 dialysate level in garlic group

	GARLIC		p
	before	after	
IL-6			
IL-6 serum	7,10±2,30	5,00±3,00	0,005
IL-6 dialysate	39,20±2,10	33,20±7,80	0,000

## RESULT

It was found that serum IL-6 levels before and after garlic extract administration were  $7.10 \pm 2.30$  pg / ml and  $5.00 \pm 3.00$  pg / ml with  $p = 0.005$ . The IL-6 dialysate levels before and after garlic extract administration were  $39.20 \pm 2.10$  pg / ml and  $33.20 \pm 7.80$  pg / ml with  $p = 0.000$ .

## CONCLUSION

There was a decrease in serum IL-6 and dialysate levels after administration of garlic extract in patients with CKD stage V using CAPD at Moh Hoesin Hospital, Palembang.

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Department of clinical nephrology, University of Sriwijaya Palembang, Doctor of Medicine (MD), Indonesia

\*Corresponding to: Kendenan M, Department of clinical nephrology, University of Sriwijaya Palembang, Doctor of Medicine (MD), Indonesia; Tel: 628127127485; Email: mkendenan@yahoo.com

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