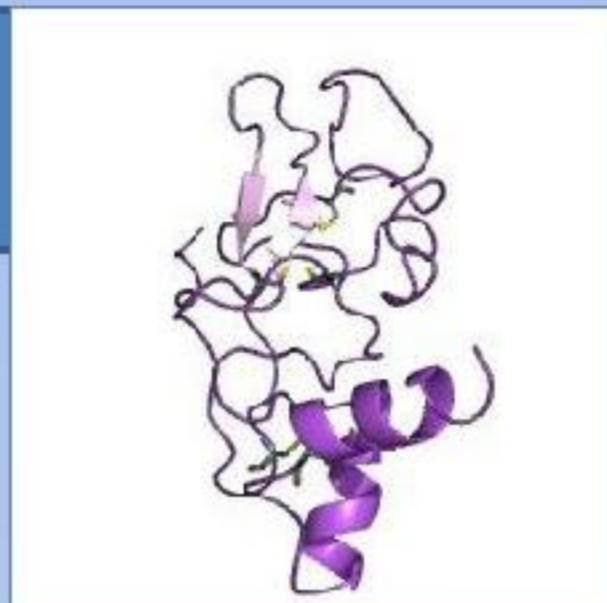


PROTHROMBIN FRAGMENTS F1+2 AND FIBRINOGEN ARE HIGHLY ELEVATED IN PERITONEAL DIALYSIS PATIENTS, BUT ARE NOT ASSOCIATED WITH CARDIOVASCULAR COMPLICATIONS AND MORTALITY IN THE LONG-TERM FOLLOW-UP

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Introduction



The prothrombin activation fragment F1+2 is an index of *in vivo* thrombin generation.

High levels of F1+2 were found in plasma from peritoneal dialysis (PD) patients, indicating low-grade activation of the coagulation system (14). F1+2 has also been suggested as a useful marker of peritoneal permeability in PD patients (15). However, long-term consequences of F1+2 elevation as well as association with cardiovascular diseases and mortality in dialysis patients are unknown.

Patients and methods

From January 2006 to January 2007, two groups were included in the investigation: CAPD group and HD group without signs of infection determined by clinical examination and C-reactive protein. Complete blood count, PT, APTT, fibrinogen, antithrombin, and F1+2 were determined. Patients were followed-up for 7 years or until death.

Results

Patients characteristics are presented in Table 1, and coagulation parameters in Table 2.

Nine patients from CAPD group and 6 patients from HD group underwent kidney transplantation. However, two patients from CAPD group have lost their grafts – one from the allograft vein thrombosis, and one from the recurrence of focal segmental glomerulosclerosis.

F1+2 and sclerosing peritonitis?

Four patients developed sclerosing peritonitis (SP), two of them after switch to HD due to loss of ultrafiltration capacity, and two after successful kidney transplantation. Three patients with SP had very high level of F1+2 (5529.8 to 8777.6 pmol/L), but one young patient with the most severe form of encapsulating SP requiring surgical adhesiolysis had F1+2 - 577.5 pmol/L.

Table 1. Patients' characteristics

	CAPD group (n 28)	HD group (n 18)
Age	45,3 (18-75)	53,7 (18-74)
Gender (% male)	42.8	55.5
Time on dialysis	36 (12-54)	38 (12-62)
Primary kidney disease		
Glomerulonephritis	13	6
Nephroangiosclerosis	4	2
Diabetic nephropathy	3	2
Pyelonephritis	2	2
Other	6	6

Table 2. Coagulation parameters.

	CAPD group	HD group	p
Fibrinogen	7.3 (1.9-7.6)	3.2 (2.0-5.5)	p<0.05
PT	1.34 (0.97-1.44)	1.05 (0.95-1.32)	ns
APTT	27.9 (23-36.1)	36.2 (23.3-34.9)	ns
Plt	209	150	ns
Antithrombin	101.6% (73.9-152.7)	82.9% (65.9-113.5)	ns
F1+2 (serum)	3331.4 (300-8780.6)	514.4 (294+1607.5)	p<0.001

During the follow-up period of 7 years, 16 patients died (11 from the CAPD, and 5 from the HD group).

There was no correlation between coagulation parameters and cardiovascular mortality.

Possible predictive role of F1+2 in development of sclerosing peritonitis should be investigated.

