Table 1. Glomerular filtration based on cardiovascular antecedents studied

	GF (Cockcroft)	p	GF (MDRD) (ml/min)	p
AHTN (no) (18.7%)	44 ± 19	NS	57 ± 18	NS
AHTN (yes) (87.3%)	39 ± 13		50 ± 15	
IHD (no) (83.3%)	41 ± 13	(0.014)	53 ± 16	(0.022)
IHD (yes) (16.7%)	29 ± 11		41 ± 13	
HF (no) (80.3%)	41 ± 14	NS	53 ± 16	(0.028)
HF (yes) (19.7%)	33 ± 12		42 ± 12	
AF (no) (76.4%)	39 ± 14	NS	50 ± 15	NS
AF (yes) (23.6%)	39 ±13		54 ± 17	
CVA (no) (72.6%)	38 ± 13	NS	51 ± 15	NS
CVA (yes) (27.4%)	44 ± 13		51 ± 19	
PVD (no) (94.5%)	40 ± 13	NS	51 ± 16	NS
PVD (yes) (5.5%)	35 ± 21		44 ± 17	
DM (no) (62.7%)	39 ± 15	NS	50 ± 16	NS
DM (yes) (37.7%)	40 ± 12		52 ± 15	

AHTN: Arterial hypertension; IHD: Ischaemic Heart Disease; HF: Heart Failure; AF: Auricular Fibrillation; CVA: Cerebral Vascular Disease; PVD: Peripheral Vascular Disease; DM: Diabetes Mellitus; NS: Not significant. Data expressed as averages ± SD.

Several studies have shown that changes in renal function not only depend on age, but that concomitant cardiovascular disease also contributes to functional changes.[4,8] Low GF of the elderly is checked in our study. However, when the GF rate is analysed according to the associated disease, we see how patients with previous history of ischaemic heart disease and heart failure present a lower GF rate. If we also consider that cardiovascular disease is the main cause of mortality in patients with Chronic Renal Failure (CRF),[9] that many patients diagnosed with CRF die before having replacement therapy[10] and that age cannot be treated, cardiovascular prevention should be a priority in the treatment of chronic renal failure in geriatric patients.

1. Kappel B, Olsen S. Cortical interstitial tissue and sclerosed glomeruli in the normal human kidney, related to age and sex. A quantitative study. Virchows Arch A 1980;387:272-7.
2. Fliser D, Ritz E. Renal haemodynamics in the elderly. Nephrol Dial Transpl 1996;11(S9)2-8.
3. De Jong PE, Halbesma N, Gansevoort RT. Screening for early chronic kidney disease-what method fits best? Nephrol Dial Transplant 2006;21:2358-61.
4. Kasiske BL. Relationship between vascular disease and age-associated changes in the human kidney. Kidney Int 1987;31:1153-9.
5. Lindeman RD, Tobin J, Shock NW. Association between blood pressure and the rate of decline in renal function with age. Kidney Int 1984;26:861-8.
6. Cockroft DW, Gault MH. Prediction of creatinine clearance from serum creatinine. Nephron 1976;16:31-41.
7. Levey AS, Greene T, Kusek JW, Beck GJ. Simplified equation to predict glomerular filtration rate from serum creatinine. J Am Soc Nephrol 2000;11:828(A.)
8. Fliser D, Franek E, Joest M, Block S, Mutschler E, Ritz E. Renal function in the elderly: impact of hypertension and cardiac function. Kidney Int 1997;51:1196-204.
9. Eknoyan G. On the epidemic cardiovascular disease in patients with chronic renal disease and progressive renal failure: a first step to improve the outcomes. Am J Kidney Disease 1998;32(S3):1-4.
10. Locatelli F, Pozzoni P: Chronic kidney disease in the elderly: is it really a premise for overwhelming renal failure? Kidney Int 2006;69:2155-66.

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Individualisation of the peritonitis protocol in peritoneal dialysis

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Dear Editor,

Different recommendations have been published regarding the empirical treatment of peritonitis in peritoneal dialysis.[1] In our centre we follow the recommendations of the Spanish Society of Nephrology published in 2004, which advise vancomycin, tobramycin and intraperitoneal ampicillin as initial treatment.[2]

In recent years it has been shown that oral ciprofloxacin is just as effective as an intraperitoneal antibiotic in the treatment of peritonitis.[3]

We carried out a retrospective study of all cases of peritonitis that occurred in our Unit from January 2006 until June 2008. There were 123 episodes in total. The germs responsible are outlined in table 1.

The sensitivity of gram-negative germs to ampicillin was evaluated based on the progressive increase of their resistance. In 2006, 58.3% were resistant and in 25% of the cultures, sensitivity to ampicillin was not evaluated. In 2007, 66.6% were resistant and sensitivity was not evaluated in 22% of cases. In 2008, the percentage of resistance reached 77.7% and it was not evaluated in 11.1%.

Sensitivity of gram-negative peritonitis to ciprofloxacin was 91% in 2006, 77.7% in 2007 (22.3% not tested) and 100% in 2008.

In terms of gram-negative peritonitis, in our centre there is a high percentage of cases of oxacillin-resistant germs and therefore treatment with vancomycin is required in the majority of occasions.

In light of the results, the empirical antibiotic protocol was changed to intraperitoneal vancomycin and oral ciprofloxacin, while maintaining antifungal prophylaxis with oral fluconazole, therefore avoiding treatment with aminoglycosides and their detrimental effect on residual renal function.

Peritoneal dialysis units must take into account the profile of the organisms responsible for peritonitis in their area, as well as the resistance pattern, when deciding the most suitable empirical antibiotic protocol in each case.

1. Piraino B, Bailie GR, Bernardini J, Boeschoten E, Gupta A, Holmes C, et al. Peritoneal Dialysis-Related infections recommendations: 2005 Update. Peritoneal Dialysis Internacional 2005;25:107-31.
2. Sansone G, Cirugeda A, Bajo MA, del Peso G, Sánchez Tornero JA, Alegre L, et al. Actualización de protocolos en la práctica clínica de diálisis peritoneal, año 2004. Nefrología 2004;XXIV(2005.)
3. Fleming LW, Phillips G, Stewart WK, Scout AC. Oral ciprofloxacin in the treatment of peritonitis in patients on continuous ambulatory peritoneal dialysis. J Antimicrob Chemoter 1990;25:441-8.

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Table 1

	2006 (pac.: 49)	2007 (pac.: 54)	2008 (pac.: 51)
Total peritonitis	46	55	22
Grampositive	**23 (50%)**	**28 (50.9%)**	**13 (59%)**
Coagulase positive	18 (39.1%)	19 (34.54%)	8 (36.3%)
Streptococcus	1 (2.1%)	5 (9.09%)	2(9%)
Sensitive S. Aureus meticilin	1 (2.1%)		1 (4.5%)
Resistant S. Aureus meticilin	1 (2.1%)	2 (3.6%)	
Corynebacterium		2 (3.6%)	1(4.5%)
Lactococcus	2 (4.3%)		
Micrococcus			1 (4.5%)
Grammnegative	**12 (26%)**	**18 (32.7%)**	**9 (40.9%)**
E. coli	1 (2.1%)	5 (9.09%)	1 (4.5%)
Klebsiella	3 (6.5%)	4 (7.2%)	2 (9%)
Serratia	2 (4.3%)	4 (7.2%)	2 (9%)
Pseudomona	1 (2.1%)	3 (5.4%)	1 (4.5%)
Enterobacter	4 (8.6%)	2 (3.6%)	1 (4.5%)
Pasteurella	1 (2.1%)		
Citobacter			1 (4.5%)
Haemophilus			1 (4.5%)
Negativeculture	**11 (23.9%)**	**7 (12.7%)**	
Fungus		**1 (1.81%)**	
Mycobacterium		**1 (1.81%)**	