

# 노인의 신장 질환

## Renal Disease in the Elderly

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3가 7 - 206

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65

가 가

가

### Abstract

Aging is a normal degenerative biologic process that affects many organs, of which the kidney is one of the most prominently affected. Physicians who treat elderly patients must be aware of the decline in renal function that accompanies the aging process. The findings of urinary abnormalities or a decreased glomerular filtration rate (GFR) in elderly patients should alert clinicians to fully evaluate the renal function. GFR decreases steadily, starting in the middle age. Evaluation of elderly patients should include careful consideration of possible fluid and electrolyte disturbances. Acute renal failure is most frequent among the aged, mainly due to the comorbidities and the intervention they require. Diabetes and renovascular diseases including hypertension now account for most of the cases of chronic kidney disease. The elderly are the fastest growing population of patients requiring renal replacement therapy in this aging society. This represents one of the great public health issues.

**Keywords :** Aging process; Renal function;  
Urinary abnormality; Acute renal failure;  
Chronic kidney disease

80

40

20%

40

1%

가

가

( 1, 2).

(1, 2).

1.	가	2.	가
		40	10 10%
		40	10 7.5%
	: media , intima		(0.75 ml/min/1.73 m/year)
-			
	가		
	가	65	
		40 ~ 60%	
		가	(renal
		parenchymal disease)	
		(isolated hematuria)	
		(IVP)	가
( , , , [ cast ])		가	
	(blood urea	80%	가 , ,
nitrogen, BUN)	(creatinine)		
가 가			
1.		2.	
	가	가	24
	가	150 mg	dipstick
(dysmorphic red blood cell)	(albumin)		
	(light chain)		
		가	

가 . , .

1 dipstick 가 Cockcroft - Gault

30 ~ 150 mg (microal- (3).

buminuria) , Ccr(mL/min)

$$= \frac{(\quad) \times (140 - \quad) \times 0.85(\quad)}{(72) \times (\quad \text{mg/dL})}$$

(ACE inhibitor)

3.

( : , , )

가

(glomerular filtration, GFR) 가 (sodium, Na) .

(creatinine clearance, Ccr) .

(hyponatremia)

65 kg 80 (hypernatremia) .

1.0 mg/dl (antidi-

54 ml/min uretic hormone, ADH)

(4, 5).

(potassium, K) 가

0.7 mg/dL 1.4 mg/dL

50% 가 가 가

(hypokalemia) (hyperkalemia)

, 1~2%  
 (8).  
 (hypercalcemia)  
 ,  
 , Thiazide (6).  
 (hypocalcemia)  
 (7~9).

### (Acute Renal Failure, ARF)

(pre - renal), (intra - renal) (post - renal) (10).

가  
 (membranous nephropathy)  
 (minimal change disease)  
 (primary amyloidosis)

1. (Pre - renal ARF) (perfu- sion)

가  
 2  
 ( :  
 , penicillamine), , B  
 11%

가  
 ( ,  
 ACE inhibitor

가 ,

(multiple myeloma), , ,

가 .

ACE inhibitor .

ACE inhibitor .

2/3 (rhabdomyolysis)

(congestive heart failure), , , statin

NSAID(nonsteroidal antiinflammatory drug) .

3. (Obstructive Nephropathy)

2. (Acute Tubular Necrosis, ATN) 가

(ischemic) 가

(nephrotoxic) 가 , , ,

(sepsis), nary catheter) (uri-

(collecting system)

4. (Renal Vascular Disease)

(atherosclerotic aortoiliac artery) 60 1/2

side (>50%) 가

aminoglycoside .

가 가 .

가 .

angioplasty) (percutaneous transluminal renal angioplasty) . NSAID 가가

. Corticosteroid

, ACE inhibitor NSAID (delayed hypersensitivity) pros-taglandin

(vascular bruit) taglandin

(urinary sediment) COX - 2 NSAID (11).

(Chronic Renal Failure)

3

Lactic dehydrogenase(LDH) 1 ~ 2 가

가 1 가

(National Kidney Foundation) 5

(Chronic Kidney Disease) ( 3)(12).

20 ~ 30%

5. NSAID (Renal Disease Associated with NSAID) 20% 가 , 10%

NSAID 가 , , , NSAID (uremia) NSAID 가 (13).

## 3.

Classification and Action Plan for Chronic Kidney Disease

Stage	Description	GFR(mL/min/1.73m <sup>2</sup> )	Action*
	At increased risk	90(with CKD risk factors)	ScreeningCKD risk reduction
1	Kidney damage with normal or GFR	90	Diagnosis and treatment Treatment of comorbid conditions, slowing progression, CVD risk reduction
2	Kidney damage with mild GFR	60 ~ 89	Estimating progression
3	Moderate GFR	30 ~ 59	Evaluating and treating complications
4	Severe GFR	15 ~ 29	Preparation for kidney replacement therapy
5	Kidney Failure	< 15(or dialysis)	Replacement (if uremia present)

Shaded area identifies patients who have chronic kidney disease ; unshaded area designates individuals who are at increased risk for developing chronic kidney disease. Chronic kidney disease is defined as either kidney damage or GFR < 60 mL/min/1.73 m<sup>2</sup>

Abbreviations : GFR , glomerular filtration rate ; CKD, chronic kidney disease ; CVD, cardiovascular disease

1.

(diabetic nephropathy)

가 . , 가 가

가

, (14).

가 . 가

, 가가 (meta-

bolic acidosis)

가

가

30~40%

10 15 가 (essential hypertension) 40

3.

10 15

가 (15).

, 15% 가  
(renin) . 가

2.

3가

. 가 .

, calcium , ACE  
inhibitor가 . Calcium

가  
가 . , ACE inhibitor

가

(nephrosclerosis)

. ACE inhibitor

0.6 g/ 가

Kg

가

가

가

3.5~4.0 g/dl

(16).

erythropoietin(EPO)

가

가

가 3~5

12~18 g

mg/dL

가

7.0 g/dL

6 g

( ferritin

<100 µg/L)

가 .

가

recombinant EPO

가

10~11 g/dL

가



## 4. (Dialysis and Transplantation)

- 가
- 가
- 가
- 가
- (17).
- 가
- 가
- 가
- (18).
- 가
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