

### Transplantation in the Elderly Patients

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1970 50 가 B T  
 . B mitogen 20%  
 B  
 idiotypic  
 가 가  
 cyclosporine 가 2)  
 1) (European Dialysis Transplant Association, EDTA)  
 1) 1982 87 28%  
 가 65 85  
 가 가 EDTA 2)  
 가 1980 10.1% 1987 9.3%  
 Table 1  
 B T 1980 4.2% 1987 2.4%  
 가 T . 55 64  
 가 T 1000  
 T 가 가 . 87 가  
 (anamnestic 1980 75 1987 55  
 response) 가 T  
 US Renal Data System(USRDS)  
 가 T 3) 65  
 가 CD4 CD8 가 20 55.5% 45 64  
 20%가 CD4/CD8 23.3%  
 가 가  
 T , 1970  
 가 mitogen  
 T 가 80 90%  
 T  
 T

3) 1970 Simmons 4) 45 15% 50% 5) Pretagostini II) 25.7%, 36 45 6.3%

1981 83 50 87.5%  
60 80% 36 45 42% 가  
57 67% 가

Cyclosporine Valez 9) 71%  
90%가 6  
1991 USRDS 3) 가  
1 80 85% 1 가

가 DeLuca Cardella 5) 6) 87%  
55 1 5 78% 1  
75% 가 가가

가 Yuge 6) UCLA Table 3  
, 10  
10 20 39% 50 30  
55 57%

가 70%

가 1 1

Shat 7) 50 가 3 가  
5 가

4) 가  
15%  
50%

Vivas  
8) 13%  
Valez 9) 가  
28%, 68%  
10)

5) ( )

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**Table 3.** Suggestions for evaluation of elderly patients for renal transplantation

Cardiac evaluation			
Asymptomatic, nondiabetic patients	55 yrs old:		
diabetic patients	35 yrs old:		
Cardiac stress test, including technitium-99 radionucleide ventriculography (ventricular performance) and thalium -201 scan (myocardial perfusion) or dipyridamole-thallium scan*			
Echocardiogram			
Symptomatic patients; asymptomatic patients with a positive stress test			
Cardiac catheterization(left ventriculography, coronary angiography)			
Gastrointestinal evaluation			
Barium enema			
Lower endoscopy for symptomatic diverticular disease			
Gallbladder ultrasound			
Symptomatic patients; all diabetic patients			

\* For patients who cannot exercise

2	:	12	1	1998
4	:	12	1	1998
	:		1	
	:		3	
	:		5	

**Table 1.** Effects of aging on immune function

<b>T-cell Function</b>	
A. Quantitative Changes: conflicting results	<ul style="list-style-type: none"> <li>· No changes in lymphocyte counts</li> <li>· ↑ in the proportion of T cells to other lymphocytes and ↑20% in CD4 and CD8 cells</li> <li>· No change in the CD4/CD8 ratio</li> </ul>
B. Qualitative Changes:	deficiencies in activation, subsequent differentiation and proliferation <ul style="list-style-type: none"> <li>· Proliferation of T cells to conventional mitogenic and monoclonal Ab(OKT3 or Leu4) stimulation to be reduced by as much as 80-90%</li> <li>· Ag processing by macrophage and binding of Ag to the T-cell receptor are intact</li> <li>· Defective signal transduction due to depressed calcium influx following binding of Ag to T cell receptors</li> <li>· Interferon and IL-2 synthesis decreases markedly with aging.</li> </ul>
<b>B-cell Function; less affected by aging than T-cells</b>	
	<ul style="list-style-type: none"> <li>· 20% ↑ in the proliferative response to B-cell mitogen</li> <li>· No change in B cell number and serum immunoglobulin levels</li> <li>· ↓ of autoantibody and anti-idiotypic antibody, which reflects lack of suppressor T-cell control of B-cell activity.</li> </ul>

**Table 2.** Results of cadaveric renal transplantation in the elderly and impact of cyclosporin

Source	No. of patients	Age (yr)	Survival rates(%)					
			Patient			Graft		
			1 yr	3 yr	5 yr	1 yr	3 yr	5 yr
Pirsch et al (1989)	34	60-73	91	91	—	74	74	—
Vivas et al (1992)	22	65-73	89	89	—	71	71	—
Roza et al (1989)	17	>65	91	—	—	81	—	—
Fehrman et al (1989)	55	65-75	71	61	57	63	54	49
Schulak et al (1990)	23	>59	79	79	—	71	71	—
Fauchald et al (1988)	96	60(60-83)	76	66	—	67	59	—
Macias-Nunez of	60	55	88	—	—	84	—	—
Cameron <sup>4</sup> (1992)	45	60(61-76)	77	—	—	62	—	—
Morris et al (1991)	45	60	75	59	58	72	57	52
Tapson et al (1987)	13	>60	—	74(2 yr)	—	—	61(2 yr)	—
Sommer et al (1986)	52	>50	88(18 mo)	—	—	82(18 mo)	—	—
Sommer et al (1986)	482/198(AZA/ CyA)	55-60	84/89	—	—	59/55	—	—
		60-65	85/79	—	—	57/67	—	—
		65+	63/100	—	—	43/75	—	—
USRDS <sup>3</sup> (1991)	CRT/LRT	55-59	89/89*	—	67/71 †	—	—	—
		60-64	87/92	—	64/77	—	—	—
		65-69	84/75	—	43/33	—	—	—
Andreu et al (1992)	93(AZA)	>55	(66-87)	60-80)	—	(64-84)	(37-57)	—
	70(CyA+AZA)		97	(82-94)	—	94	(72-88)	—
Velez et al (1991)	87	55(23% over 65)	86	80	73	80	72	65
Murie et al (1989)	63	>55	87	76	76	73	73	73
DeLuca and Cardella (1992)	119	55	87	—	78	75	—	—
Korb et al (1988)	24	>55(55-57)	82	72	—	70	61	—
Shah et al (1988)	36	—	81	—	—	68	—	—
Howard et al (1989)	131	>50	—	79(2 yr)	—	—	67(2 yr)	—

Abbreviations: CRT, cadaveric renal transplants; LRT, living-related transplants; AZA, azathioprine; CyA, cyclosporine A.

\*One-year survival probability (1988 transplants).

†Five-year survival probability (1985 transplants).