

# REPEATED KIDNEY TRANSPLANTATION - AN ATTRACTIVE OPTION AFTER GRAFT FAILURE?

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## Objectives:

Kidney transplantation has become the treatment of choice for patients with ESRD who are found eligible for the procedure. A renal allograft half-life (t 1/2) is however somewhere between 10 and 20 years. As a result, many recipients will be in need of repeated transplantations.

The aim of this study was to compare the graft survival of first and repeated transplants.

## Methods:

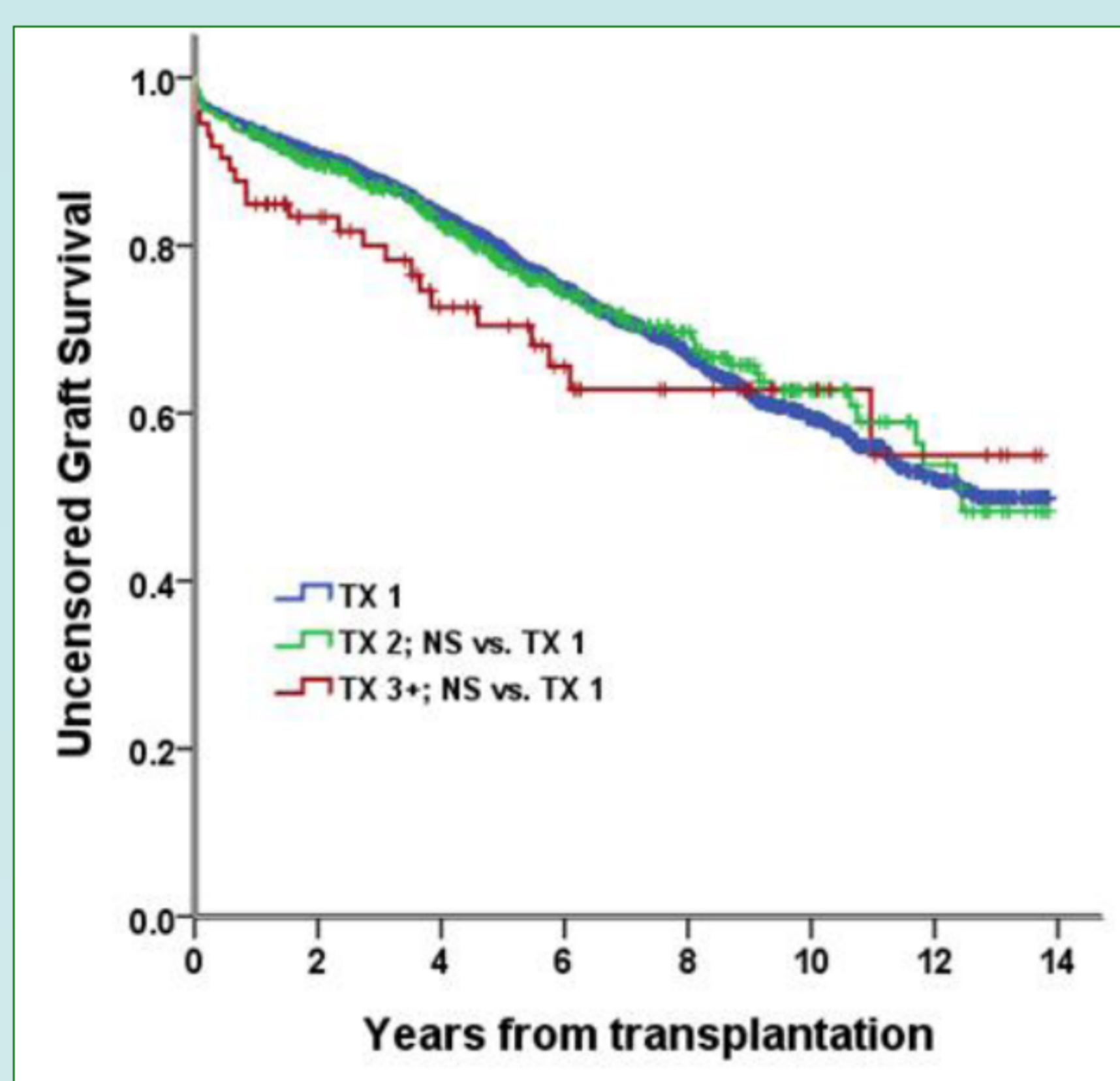
Single centre retrospective study in which all patients transplanted between 2000 and 2012, > 18 years of age at time of engraftment, were included. Data were sampled from the Norwegian Renal Registry.

Graft survival with and without censoring for death with functioning graft were estimated and compared between 1st (TX 1), 2nd (TX 2) and 3rd or more transplants (TX 3+). Survival analyses were performed using the Kaplan Meier method and Cox regression models. All comparisons were performed against TX 1.

## Results:

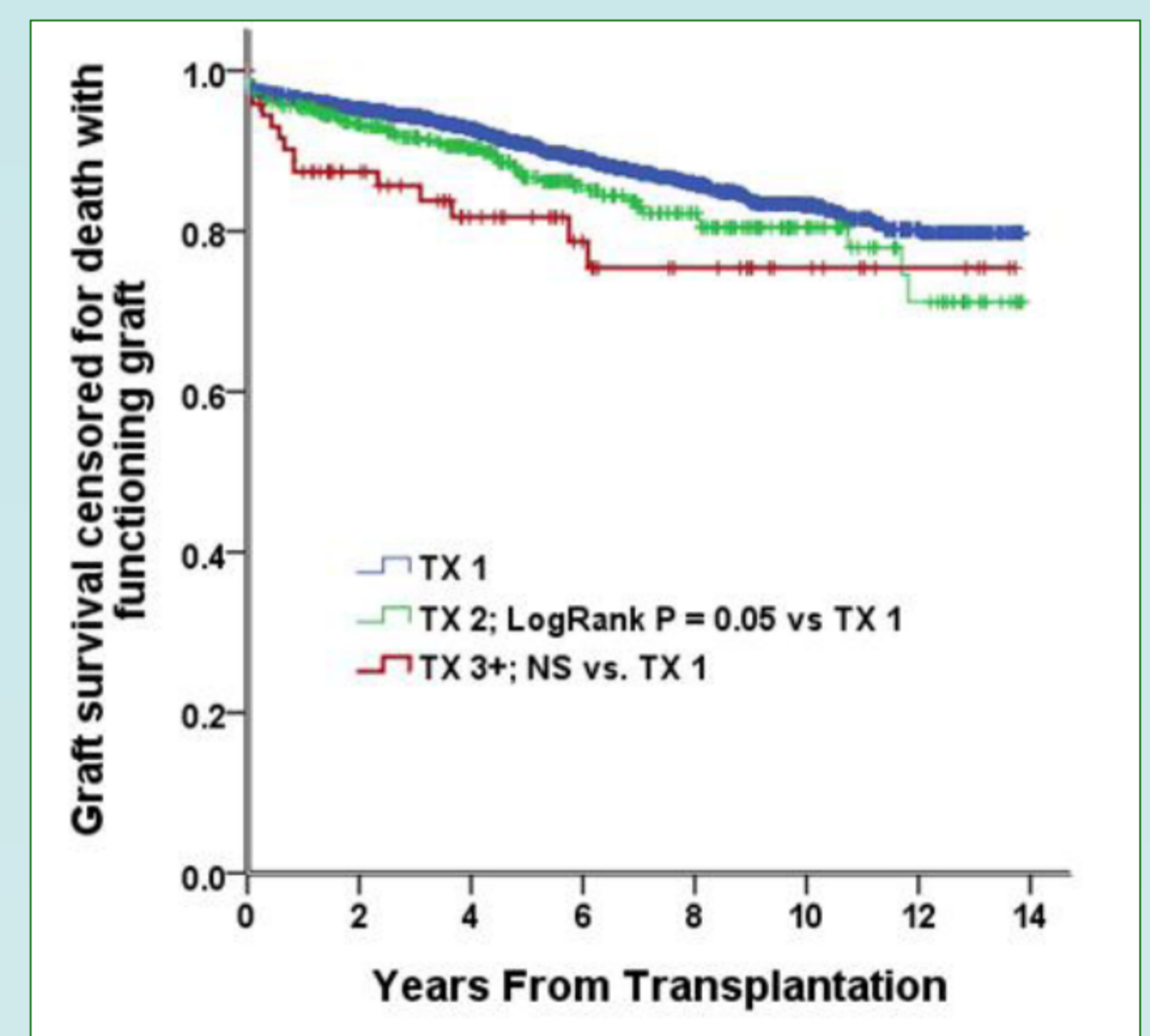
	TX1 (N = 2694)	TX2 (N = 386)		TX3+ (N = 73)	
			P (vs TX1)		P (vs TX1)
Age (years)	53.9 ± 14.5	48.0 ± 13.5	< 0.001	42.0 ± 10.5	< 0.001
Male gender	1820 (68%)	254 (66%)	ns	43 (59%)	ns
Time on dialysis (months)	14.3 ± 15.9	16.6 ± 17.9	0.02	27.7 ± 27.1	< 0.001
Dialysis mode					
- pre emptive	652 (24%)	85 (22%)	ns	10 (14%)	0.04
- PD	501 (19%)	52 (14%)	0.01	5 (7%)	0.008
- HD	1541 (57%)	249 (65%)	0.007	58 (80%)	< 0.001
Living Donor	909 (34%)	102 (26%)	0.004	23 (32%)	ns
Donor age (years)	49.0 ± 16.3	47.5 ± 16.6	ns	45.1 ± 17.6	ns
Cold ischemia time (hr)	10.1 ± 6.7	11.1 ± 6.8	0.01	10.9 ± 6.7	ns

**Table 1:** Patient and transplant characteristics



**Figure 1:** Uncensored graft survival

**Figure 2:** Graft survival censored for death with functioning graft



Data from 3153 kidney transplantations were included. No data missing. Uncensored graft survival and graft survival censored for death with functioning graft are presented in **Figure 1** and **Figure 2**. Estimated five year uncensored graft survival rates were 80% in TX 1, 78% in TX 2 and 70% in TX 3+. Estimated five year graft survival rates censored for death with functioning graft were 91%, 87% and 82%. Hazard ratios for uncensored graft loss adjusted for recipient age, recipient gender, donor age, donor source (living or deceased) and time on dialysis were 1.14 (95 CI 0.92-1.41, NS) for TX 2 and 1.73 (1.13-2.65, P=0.01) for TX 3+. Hazard ratios for graft loss censored for death with functioning graft were 1.20 (0.89-1.61, NS) and 1.63 (0.94-2.84, NS).

## Conclusions:

Second transplants perform almost as well as first transplants whereas third transplants trend to have acceptable but slightly worse survival than first and second transplants. Recipients of repeated transplants were younger and had spent longer time on dialysis treatment than recipients of first transplant.

Repeated transplantation should therefore be encouraged if the patient is found eligible and the organ supply is sufficient.

