

OBJECTIVE

To evaluate the epidemiology and graft outcomes of renal transplant patients at Hospital Kuala Lumpur from year 2017-2020.

METHODS

This is a single center retrospective cohort study. Medical records from January 2017 until December 2020 of donors and recipients were reviewed and study data extracted. Data for year 2021 was not included as transplant services at our hospital was affected by the COVID pandemic.

RESULTS

Data were cleaned, explored and analysed using SPSS version 26.0 and STATA version 14.0. Kruskal Wallis test was used to explore the difference in surgical time experienced by both donor and recipients across different years. Mixed effect linear regression was used to explore the changes in creatinine level in the recipient group.

A total of 319 participants were included, consisting of 180 recipients and 139 donors.

The number of donors and recipients increased over the years, and it was observed that donors were relatively older compared to the recipients. There was almost equal proportion in gender observed for both across the years.

Table 1: Demographic characteristics for both recipient and donor

	Overall (n = 319)	2017 (n = 28)	2018 (n = 43)	2019 (n = 116)	2020 (n = 132)
All					
Age	39.61 ± 12.01	44.68 ± 12.21	41.53 ± 13.78	38.91 ± 10.77	38.52 ± 12.19
Gender, n (%)					
Female	155 (48.6)	15 (53.6)	18 (41.9)	62 (53.4)	60 (45.5)
Male	164 (51.4)	13 (46.4)	25 (58.1)	54 (46.6)	72 (54.5)
Recipient					
Age	35.38 ± 10.86	39.47 ± 11.07	35.50 ± 13.85	35.05 ± 9.68	34.69 ± 10.73
Gender, n (%)					
Female	79 (43.9)	7 (41.2)	8 (33.3)	33 (50.8)	31 (41.9)
Male	101 (56.1)	10 (58.8)	16 (66.7)	32 (49.2)	43 (58.1)
Donor					
Age	45.09 ± 11.22	52.73 ± 9.41	49.16 ± 9.38	43.84 ± 10.12	43.41 ± 12.28
Gender, n (%)					
Female	76 (54.7)	8 (72.7)	10 (52.6)	29 (56.9)	29 (50.0)
Male	63 (45.3)	3 (27.3)	9 (47.4)	22 (43.1)	29 (50.0)

A significant difference was observed in surgery time ($p < 0.001$). Year 2018 had the longest surgery time (median of 281 minutes for donor and 294 minutes for recipient) while year 2020 had the shortest surgery time (median of 206 minutes for donor and 229 minutes for recipient). Surgery time was shorter with improved techniques and experience of the surgeon and their respective teams.

Table 2: Comparison of surgery time

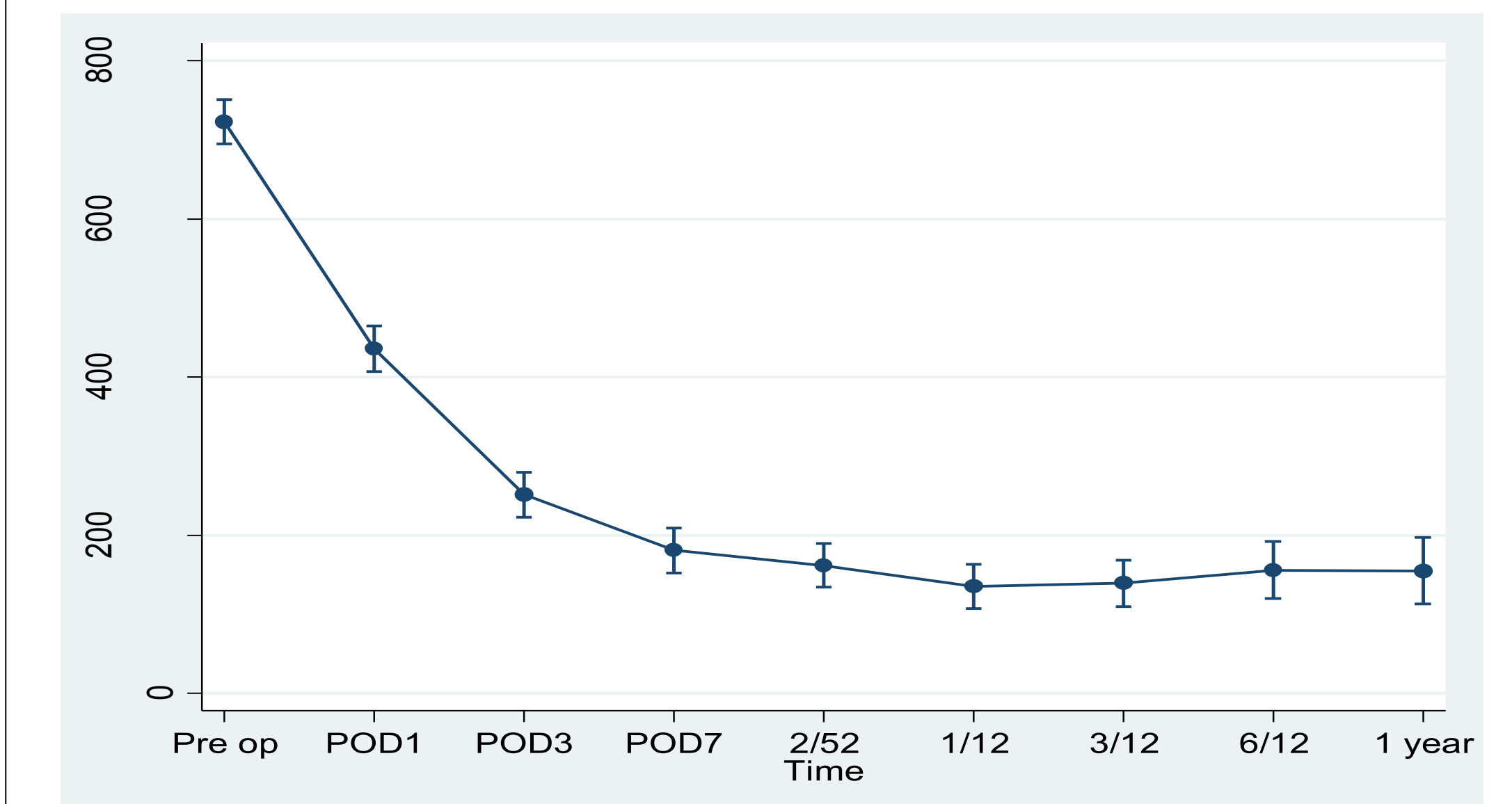
Surgery time, mins	2017	2018	2019	2020	P value
Donor	259.5 (230.8, 281.3)	281.5 (242.8, 319.3)	221.0 (195.0, 251.5)	206.0 (185.0, 225.0)	<0.001
Recipient	278.0 (238.5, 305.0)	294.0 (270.0, 320.0)	265.0 (222.0, 307.5)	229.0 (190.8, 264.0)	<0.001

A significant reduction was observed in creatinine level of recipients post-operatively on Day 1, Day 3, Day 7, 2 weeks, 1 month, 3 months, 6 months and one year when compared to pre-operatively.

Table 3: Creatinine level of recipients post operatively

	Mean ± SD	Median (IQR)	Coefficient	P value
Creatinine level				
Pre-op	435.69 ± 366.14	445.00 (78.00, 706.00)		Ref
POD1	313.96 ± 249.07	219.00 (116.75, 453.00)	-287.31 (-318.85, -255.77)	<0.001
POD3	220.82 ± 229.89	130.00 (94.00, 214.75)	-471.86 (-503.40, -440.32)	<0.001
POD7	169.02 ± 166.17	112.50 (87.00, 157.75)	-542.54 (-573.69, -511.38)	<0.001
Post 2 weeks	147.23 ± 126.44	118.00 (96.00, 149.00)	-561.31 (-592.27, -530.36)	<0.001
Post 1 month	119.92 ± 43.41	111.00 (94.00, 139.00)	-588.11 (-619.02, -557.21)	<0.001
Post 3 month	128.31 ± 74.79	116.00 (93.00, 148.00)	-584.03 (-616.15, -551.91)	<0.001
Post 6 month	141.38 ± 121.96	119.00 (94.50, 149.50)	-567.25 (-605.87, -528.63)	<0.001
Post 1 year	135.32 ± 119.09	111.00 (91.00, 139.75)	-568.33 (-612.48, -524.17)	<0.001

Figure 1: Changes in creatinine level of the recipients across time



CONCLUSION

This study demonstrated improved transplant outcomes hence justifies more initiatives to promote renal transplantation at our hospital and country.