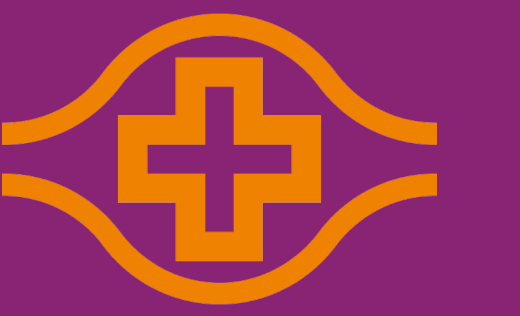


The Impact of Hypermagnesemia on Clinical Outcomes in Patients Receiving Continuous Kidney Replacement Therapy



長庚醫療財團法人
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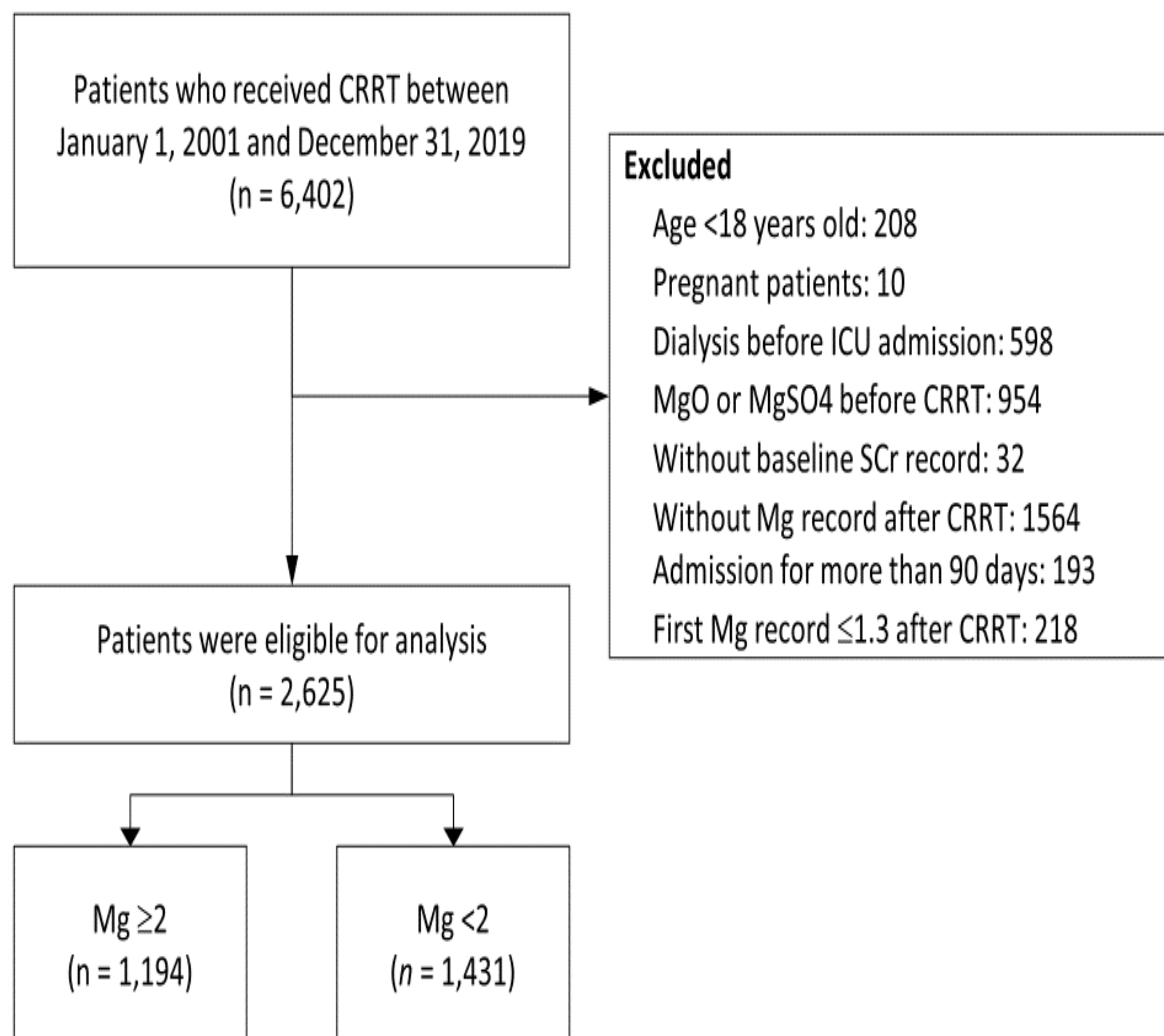
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Introduction

- A serum higher magnesium level is associated with better survival compared to low serum magnesium levels in hemodialysis patient.
- However, this effect was not observed in peritoneal dialysis patients, suggesting that the optimal range for serum magnesium may vary in different clinical context.
- Magnesium supplementation has a protective effect on kidney function in some clinical scenario.
- The impact of hypermagnesemia on continuous kidney replacement therapy (CKRT) remains unclear.

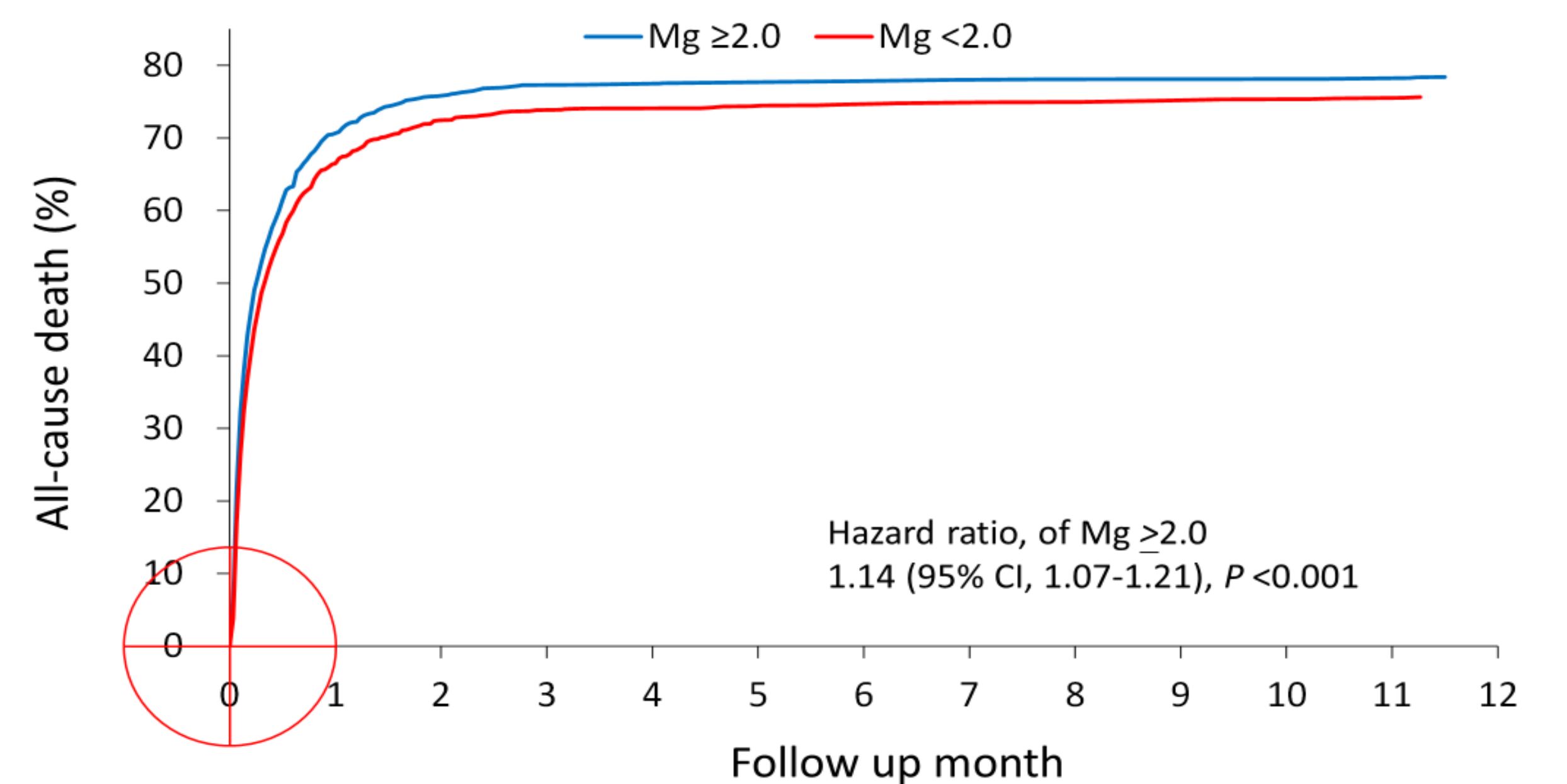
Methods and Materials

- Retrospective
- Multi-center database: Chang Gung Research Database



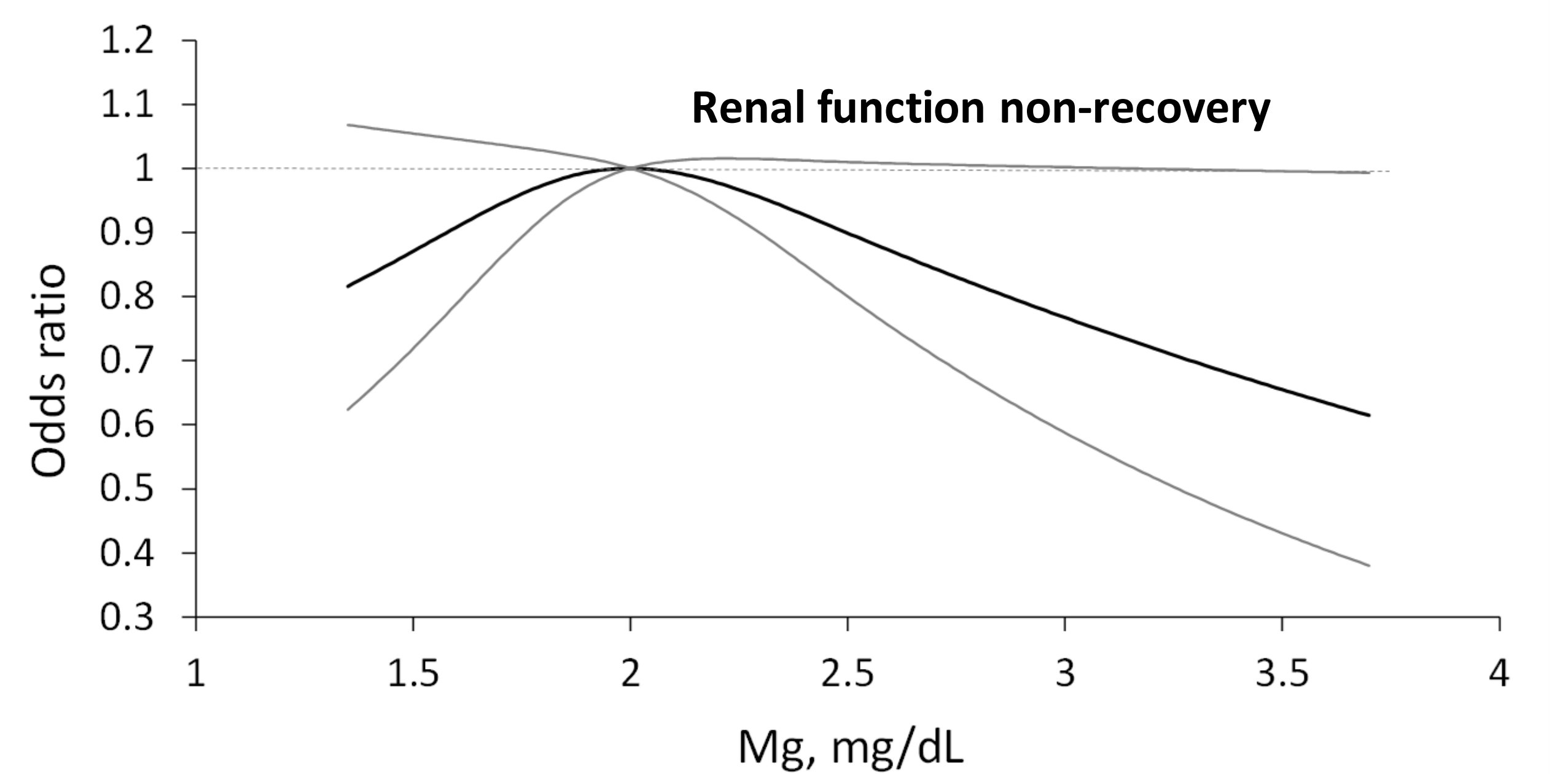
Results

Variable	Total	Before IPTW		After IPTE		STD
		Mg ≥ 2	Mg <2	Mg ≥ 2	Mg <2	
Age	63.6 ± 15.9	64.1 ± 15.9	63.2 ± 15.8	63.6 ± 23.0	63.2 ± 20.7	0.03
Male	1716 (65.4)	825 (69.1)	891 (62.3)	67.3	63.2	0.09
SOFA	16.4 ± 2.8	16.5 ± 2.8	16.3 ± 2.7	16.4 ± 4.0	16.4 ± 3.6	<0.01
APACHE	110.5 ± 29.9	111.7 ± 30.4	109.6 ± 29.4	109.7 ± 42.4	111.3 ± 38.5	0.01
Hypertension	1310 (49.9)	616 (51.6)	694 (48.5)	50.4	49.6	0.01
CKD	1447 (55.1)	662 (55.4)	785 (54.9)	52.7	55.7	-0.06
Diabetes	986 (37.6)	431 (36.1)	555 (38.8)	35.0	38.8	-0.08
CAD	715 (27.2)	343 (28.7)	372 (26.0)	29.4	26.3	0.07
Cirrhosis	476 (18.1)	232 (19.4)	244 (17.1)	18.0	17.4	0.02
Atrial fibrillation	345 (13.1)	163 (13.7)	182 (12.7)	13.7	13.3	0.01
Creatinine	4.0 [2.7, 5.7]	3.7 [2.5, 5.3]	4.2 [3.0, 6.1]	4.0 [2.6, 5.8]	4.0 [2.7, 5.7]	0.01
BUN	72.0 ± 41.5	82.0 ± 44.7	63.9 ± 36.7	74.3 ± 60.6	69.6 ± 52.2	0.12
Sodium	140.9 ± 8.5	140.3 ± 8.7	141.3 ± 8.4	140.7 ± 12.2	141.1 ± 11.0	-0.04
Potassium	4.7 ± 1.2	5.0 ± 1.2	4.4 ± 1.1	4.8 ± 1.7	4.6 ± 1.5	0.14



Number of patients at risk (%):

	0	1	2	3	4	5	6	7	8	9	10	11	12
Mg ≥2.0	100	15.1	11.7	10.4	9.8	9.4	8.9						
Mg <2.0	100	18.2	14.5	13.0	12.1	11.1	10.4						



Conclusions

- Patients who underwent continuous kidney replacement therapy with elevated serum magnesium levels were associated with higher all-cause mortality, despite experiencing the benefit of improved renal recovery.



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