What's After AKI?

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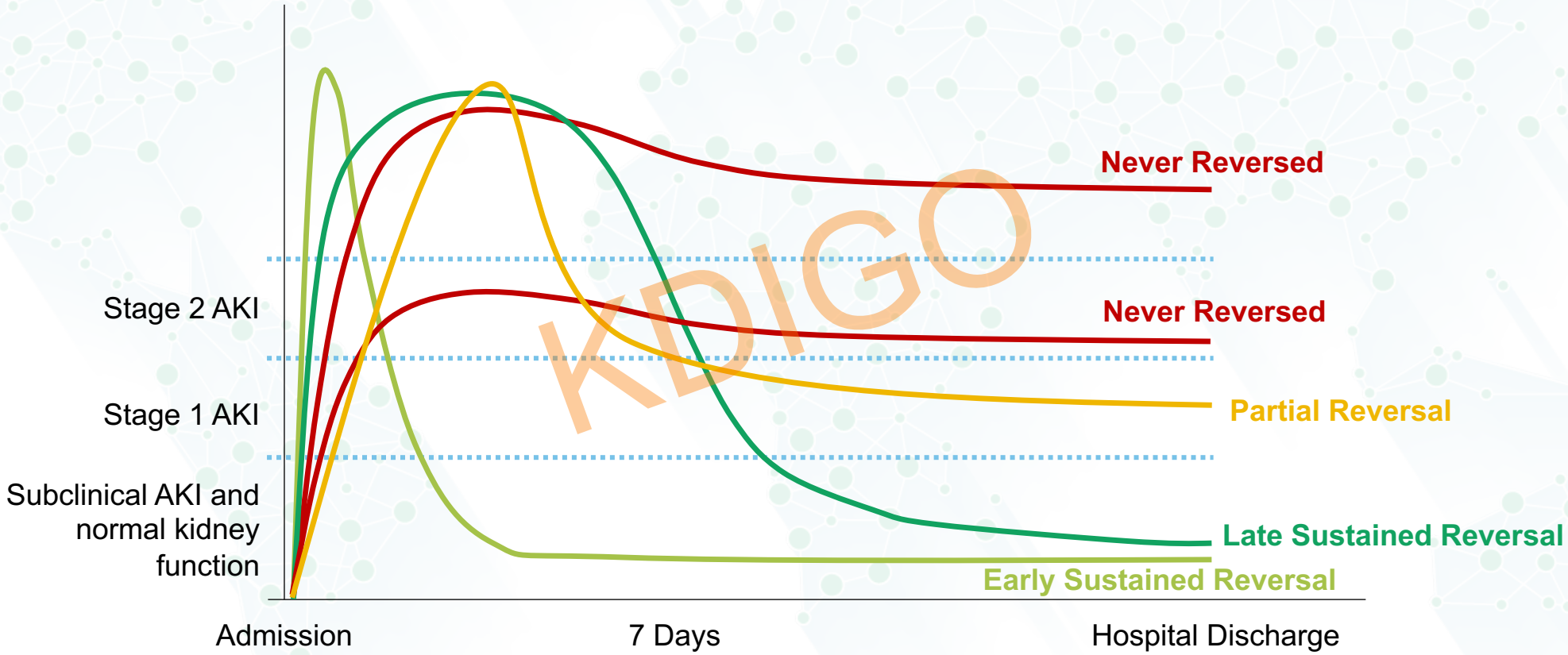
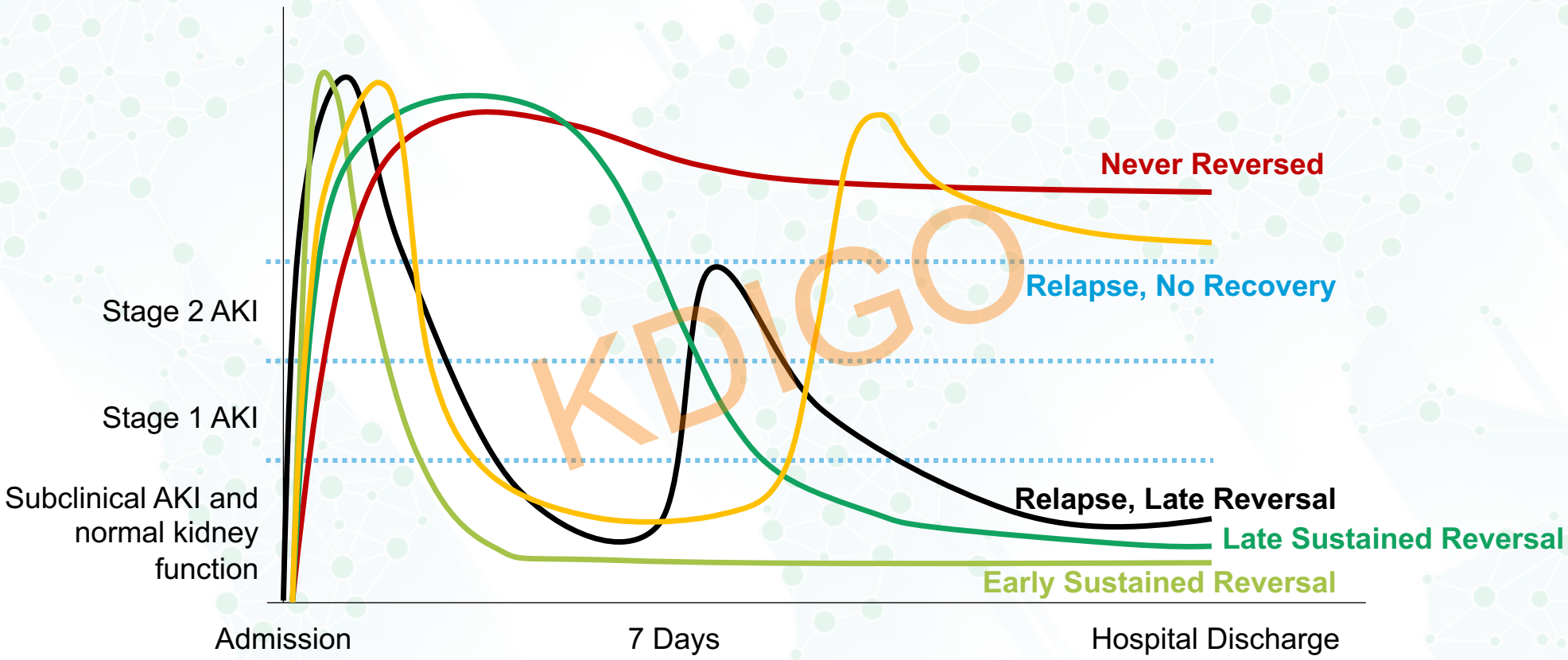
WHAT HAPPENS AFTER AKI?



Peerapornratana S et al, Kidney Int Rep (2020) 5, 839–850

WHAT HAPPENS AFTER AKI?

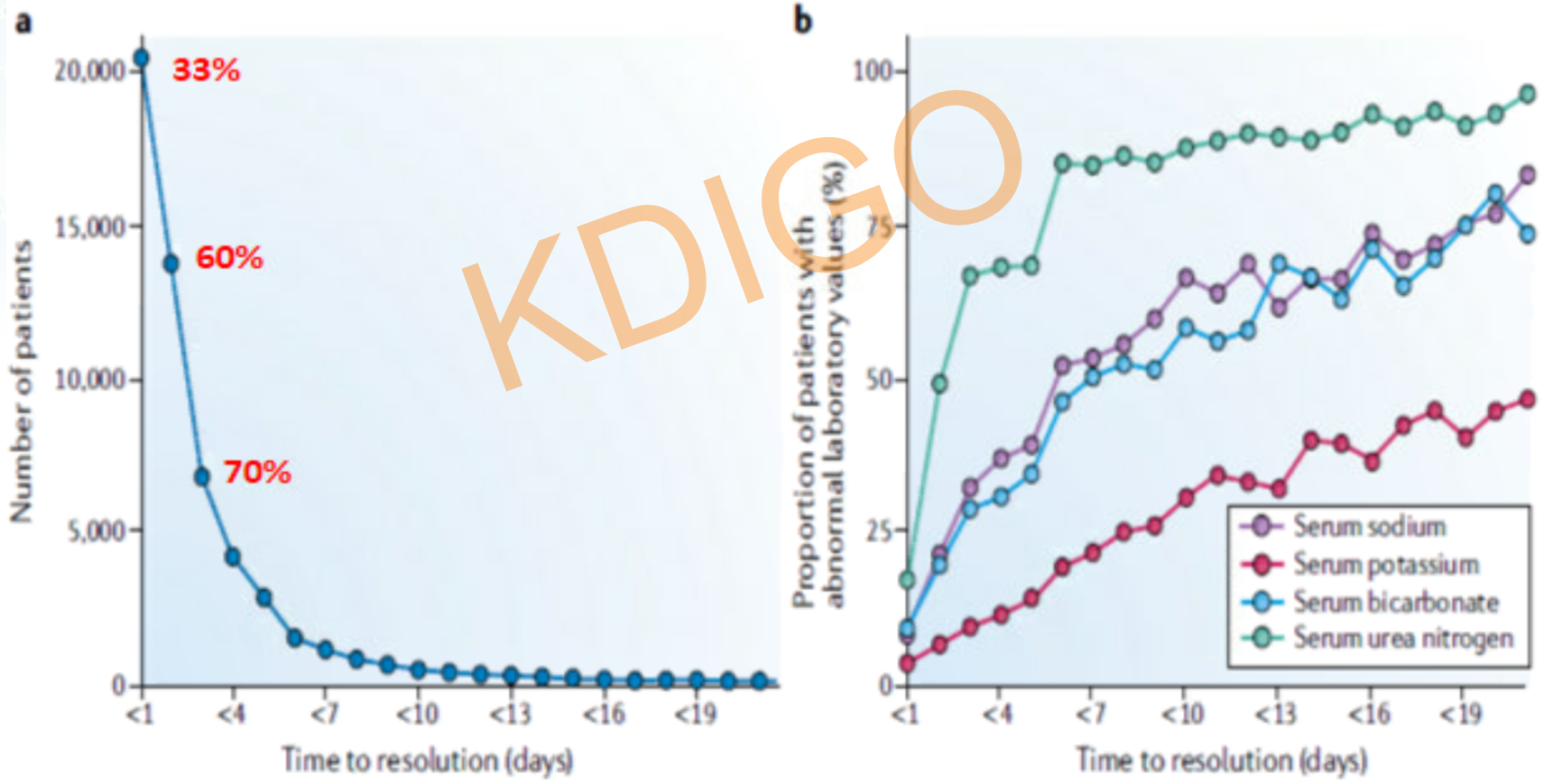


Peerapornratana S et al, Kidney Int Rep (2020) 5, 839–850

WHAT HAPPENS AFTER AKI?

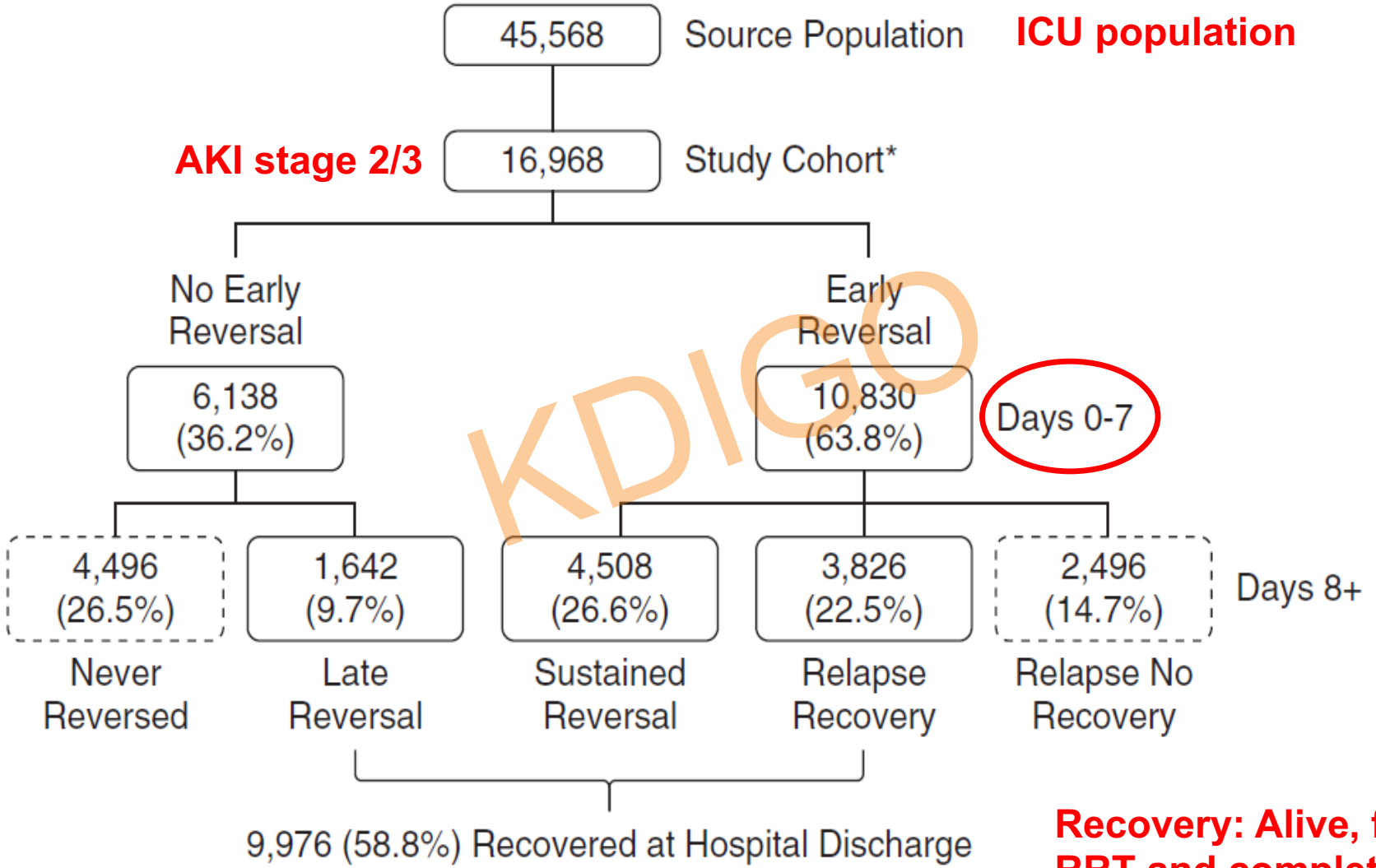
Rapid resolution of sCr in most patients with AKI.

61,726 patients admitted to the NY Presbyterian Hospital with KDIGO AKI.



Xu et al, J Am Soc Nephrol, 28:1729-1740, 2017

In the ICU

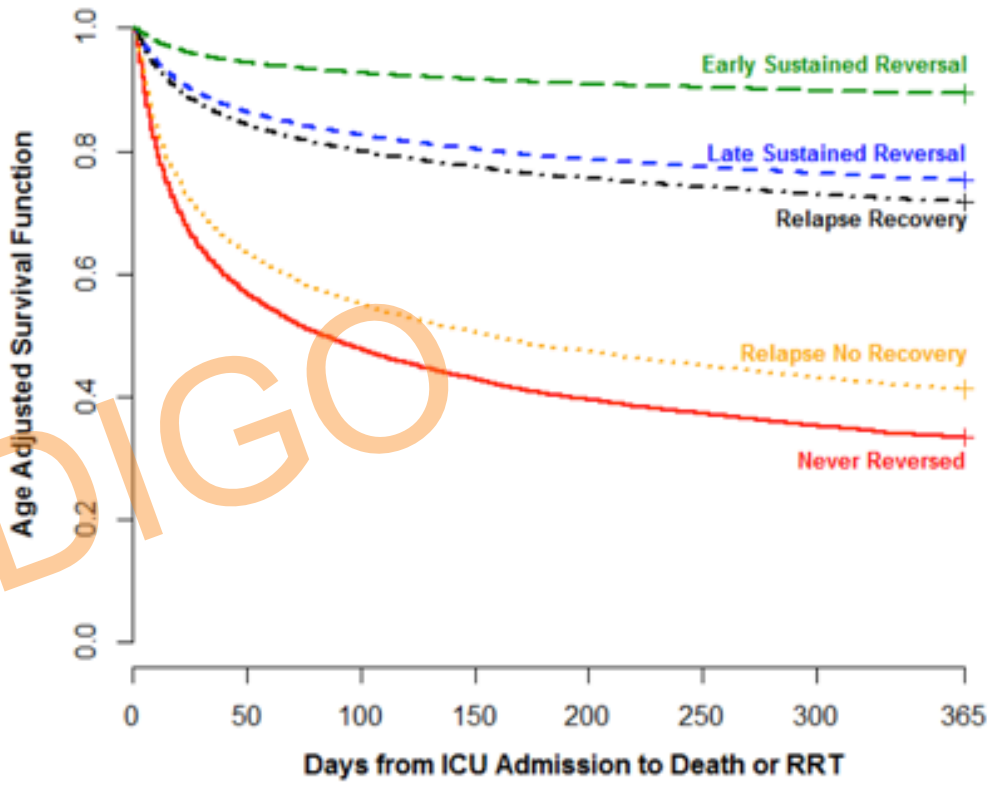


Recovery: Alive, free of RRT and complete reversal at hospital discharge

Kellum et al, Am J Respir Crit Care Med 195, 784–791, 2017

In the ICU

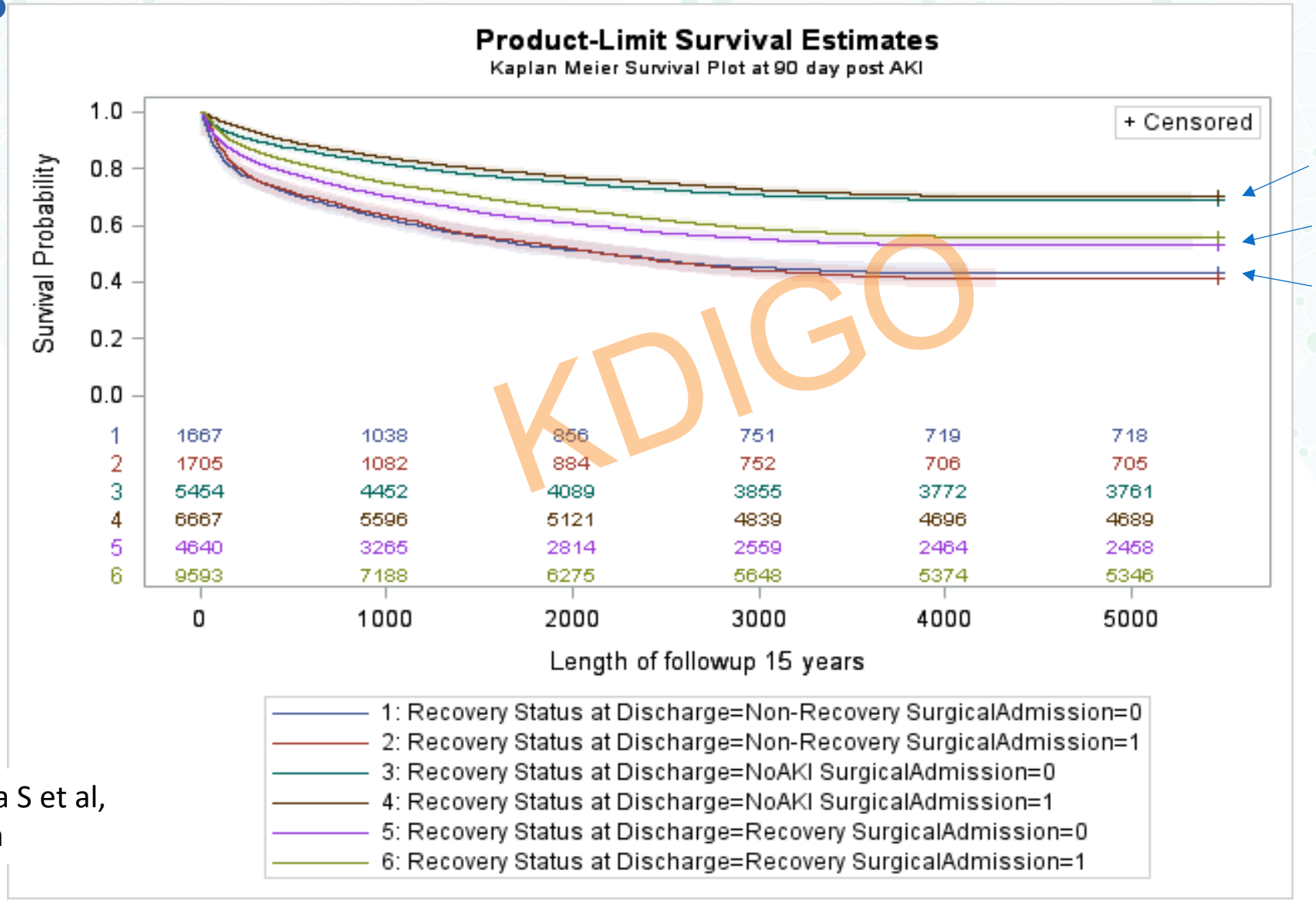
Figure 3. Age adjusted survival by recovery patterns



No. at risk								
Early Sustained Reversal	4507	4404	4317	4235	4176	4122	4070	4026
Late Sustained Reversal	1642	1529	1424	1357	1310	1272	1242	1203
Relapse Recovery	3823	3535	3245	3061	2910	2818	2719	2625
Relapse No Recovery	2496	1386	1190	1114	1075	1052	1027	1008
Never Reversed	4496	2127	1922	1826	1757	1709	1678	1648

Kellum et al.
AJRCCM Sept 2016

15 YEAR MORTALITY POST ICU STRATIFIED BY AKI/RECOVERY STATUS



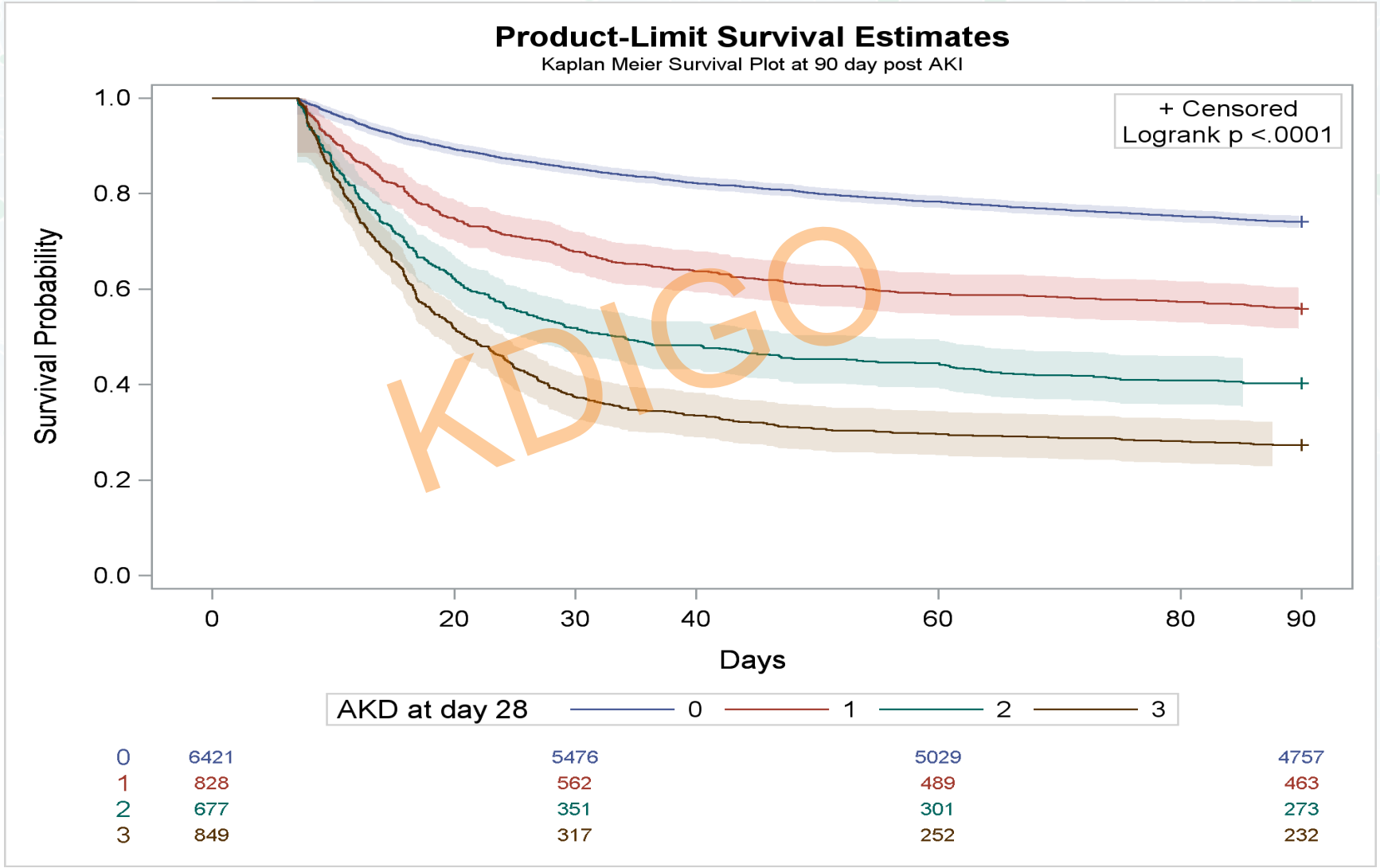
No AKI

AKI-Recovery

AKI-No Recovery

Peerapornratana S et al,
Preliminary data

In the ICU Survival by AKD Stage in Sepsis-AKI



P. Priyanka et al.
Abstract ASN

AKD Stage at 28 Days and 90-day Outcomes

	AKD 28 days post AKI				
	NO AKD	**Stage1**	**Stage2**	**Stage3**	**p-value**
	N=10,177	N=843	N=393	N=2,741	
Persistent Renal Dysfunction	248 (2.4%)	537 (63.7%)	251 (63.9%)	176 (6.4%)	<0.001
RRT	2 (0.0%)	0 (0.0%)	0 (0.0%)	21 (0.8%)	<0.001
Death	877 (8.6%)	106 (12.6%)	72 (18.3%)	2,429 (88.6%)	<0.001
MAKE	1,126 (11.1%)	643 (76.3%)	323 (82.2%)	2,618 (95.5%)	<0.001

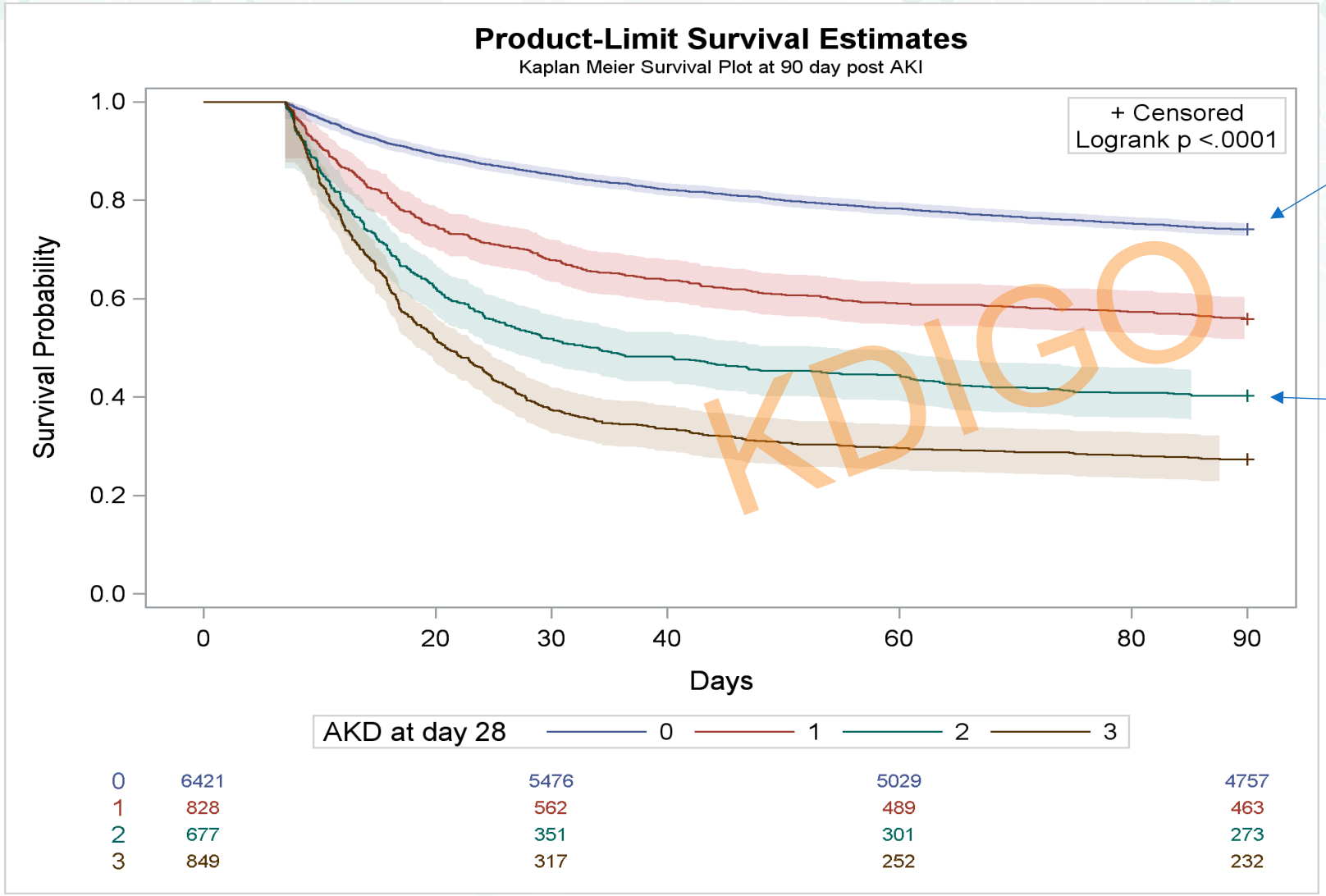
AKD Stage at 14 Days and 90-day Outcomes

	AKD 14 days post AKI				
	NO AKD	**Stage1**	**Stage2**	**Stage3**	**p-value**
	N=9,986	N=863	N=397	N=1,553	
Persistent Renal Dysfunction	284 (2.8%)	421 (48.8%)	196 (49.4%)	208 (13.4%)	<0.001
RRT	3 (0.0%)	1 (0.1%)	0 (0.0%)	16 (1.0%)	<0.001
Death	1,314 (13.2%)	178 (20.6%)	110 (27.7%)	1,020 (65.7%)	<0.001
MAKE	1,599 (16.0%)	600 (69.5%)	306 (77.1%)	1,237 (79.7%)	<0.001

AKD Stage at 7 Days and 90-day Outcomes

	AKD 7 days post AKI				
	NO AKD	**Stage1**	**Stage2**	**Stage3**	**p-value**
	N=9,651	N=888	N=389	N=1,143	
Persistent Renal Dysfunction	293 (3.0%)	376 (42.3%)	173 (44.5%)	209 (18.3%)	<0.001
RRT	3 (0.0%)	1 (0.1%)	0 (0.0%)	13 (1.1%)	<0.001
Death	1,411 (14.6%)	216 (24.3%)	117 (30.1%)	507 (44.4%)	<0.001
MAKE	1,705 (17.7%)	593 (66.8%)	290 (74.6%)	722 (63.2%)	<0.001

The AKD Conundrum



42 y.o. male
Baseline sCr 0.7
d28 sCrt 0.9
eGF 105

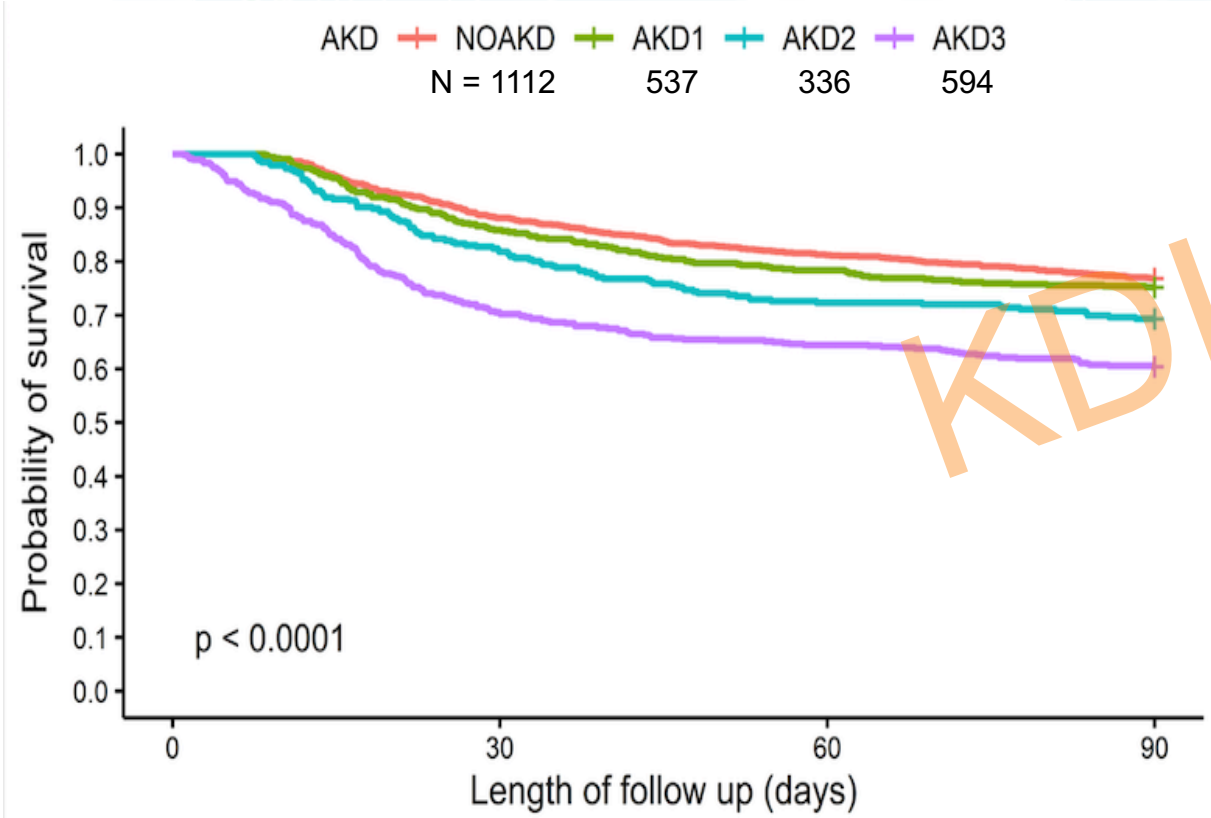
…No AKD

42 y.o. male
Baseline sCr 0.7
d28 sCrt 1.4
eGF 61.5

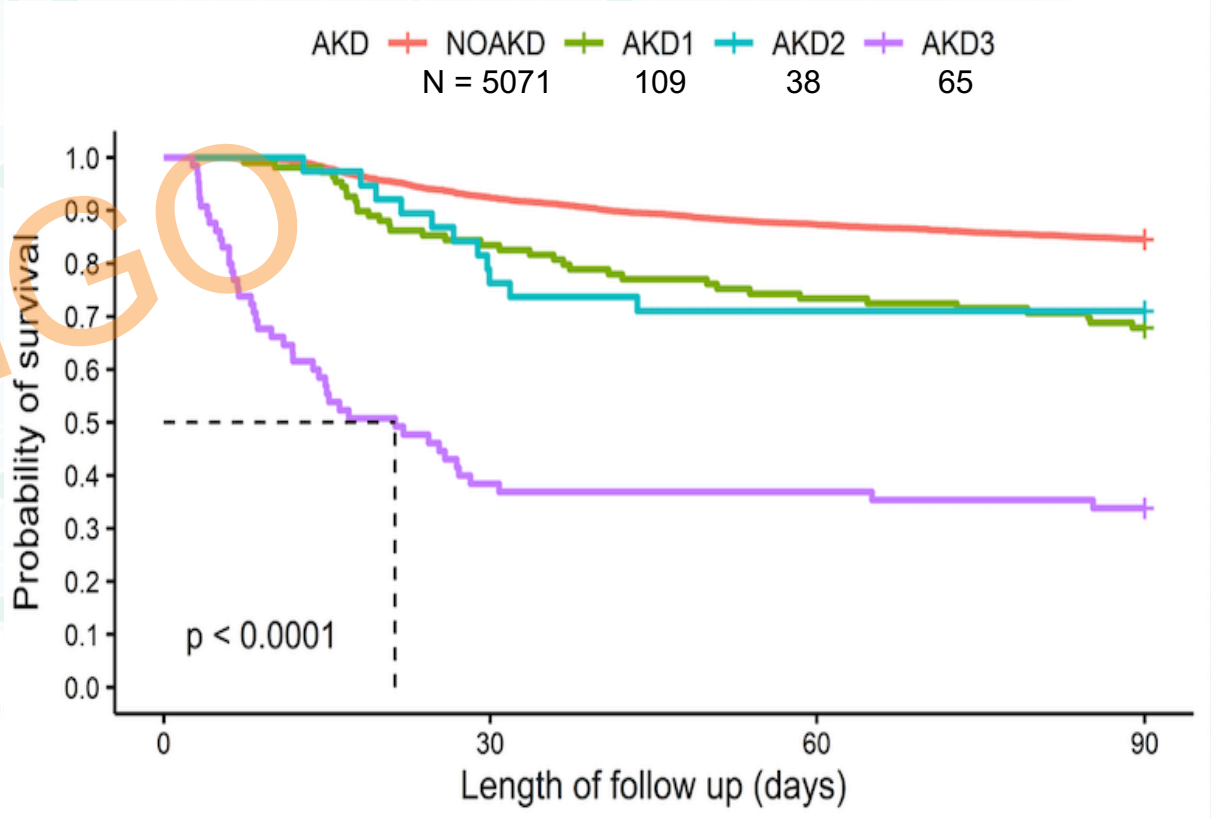
…No AKD?

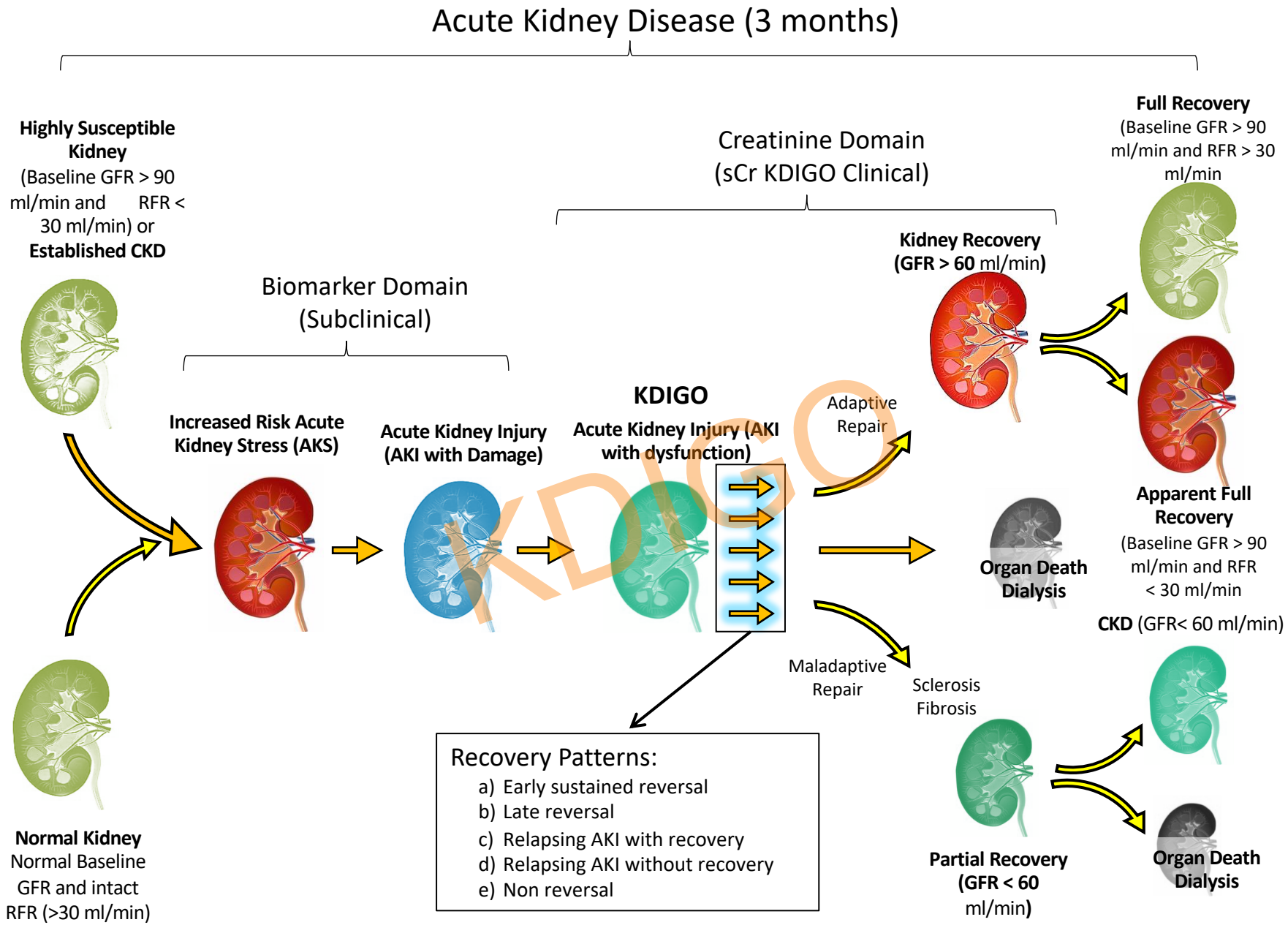
Survival to 90-Days by AKD Stage at Day 7

AKD eGFR <60



AKD eGFR >60





Ronco AJRCCM 2017

CONCLUSIONS

- AKI has long-term consequences for health and survival
- Recovery following AKI can be variable but ultimately has the greatest impact on long-term outcomes
- Thus it is imperative to capture recovery status in AKD definitions (and staging).
- Furthermore, creatinine alone is likely a poor surrogate for recovery after AKI (loss of muscle mass, functional renal reserve, etc.)