How the patient kinetics has altered after the implementation of eGFR in a nephrology outpatient clinic

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INTRODUCTION

•Implementation of estimated GFR (eGFR) in the general medicine has massively changed the renal clinics. Those changes might include not only the expansion of the renal patient numbers but an increase in number of patients sent back to general practitioners.

•This study was done in order to clarify whether the placement of renal patients has been changed according to their renal function, before and after the eGFR measurement implementation.

METHODS

•Two 6-month periods (from Jan 1 to Jun 30), in years 2005 and 2010, i.e. before and after the nationwide implementation of eGFR, were chosen for the analysis.

•All the new visits to a certified nephrologist in the Hospital were included and the medical charts were reviewed to find out the background clinical status and the disposition of each patient 2 years after the initial visit.

•Exclusion: Patients already on maintenance dialysis due to ESRD at the initial visit or those with no renal disease were excluded from the analysis.

•Japanese eGFR equation: eGFR [mL/min/1.73m^2] = 194 x age [yr] $^{-0.287}$ x sCr [mg/dL] $^{-1.094}$ x [0.738 if female], where sCr is measured in the enzymatic method; applied to a person above 17 years old.
•For statistical analysis, Microsoft® Excel® and SAS Institute Inc StatView® ver 5.0 were used.

RESULTS

•In 2005 and 2010, 115 and 117 new patients were included in the analysis, respectively (Fig 1, **a**). Although the total number of new visits appeared close, the details in 2010 differed from those in 2005 in many aspects.

•New patients with eGFR between 15 and 45 mL/min/1.73m^2 nearly doubled (35.2% in 2005 vs 64.8% in 2010, P<0.0001) (Fig 2, **b**).

•After the nephrologist's initial evaluation, more patient were asked to be followed in the original non-nephrology clinic (9.6% vs 28.2%, P<0.001) (Fig 1, **c**; Fig 2, **d**).

•The patients who continued to be followed in the renal clinic had significantly lower eGFR (median, 56.7 vs 33.8mL/min/1.73m^2, P=0.016, Mann-Whitney); within 2 years, those with baseline eGFR between 15 and 45 mL/min/1.73m^2 were more likely to be sent back to non-nephrologists (9.6 vs 29.8% of all the followed patients, P<0.001), due to the overwhelming renal clinic (Fig 1, **e**).

•Dropout patients (14.4% in 2005 and 26.2% in 2010) had significantly lower eGFR in 2010 (median, 79.0 vs 35.0 mL/min/1.73m^2, P=0.015, Mann-Whitney) (Fig 2, **f**).

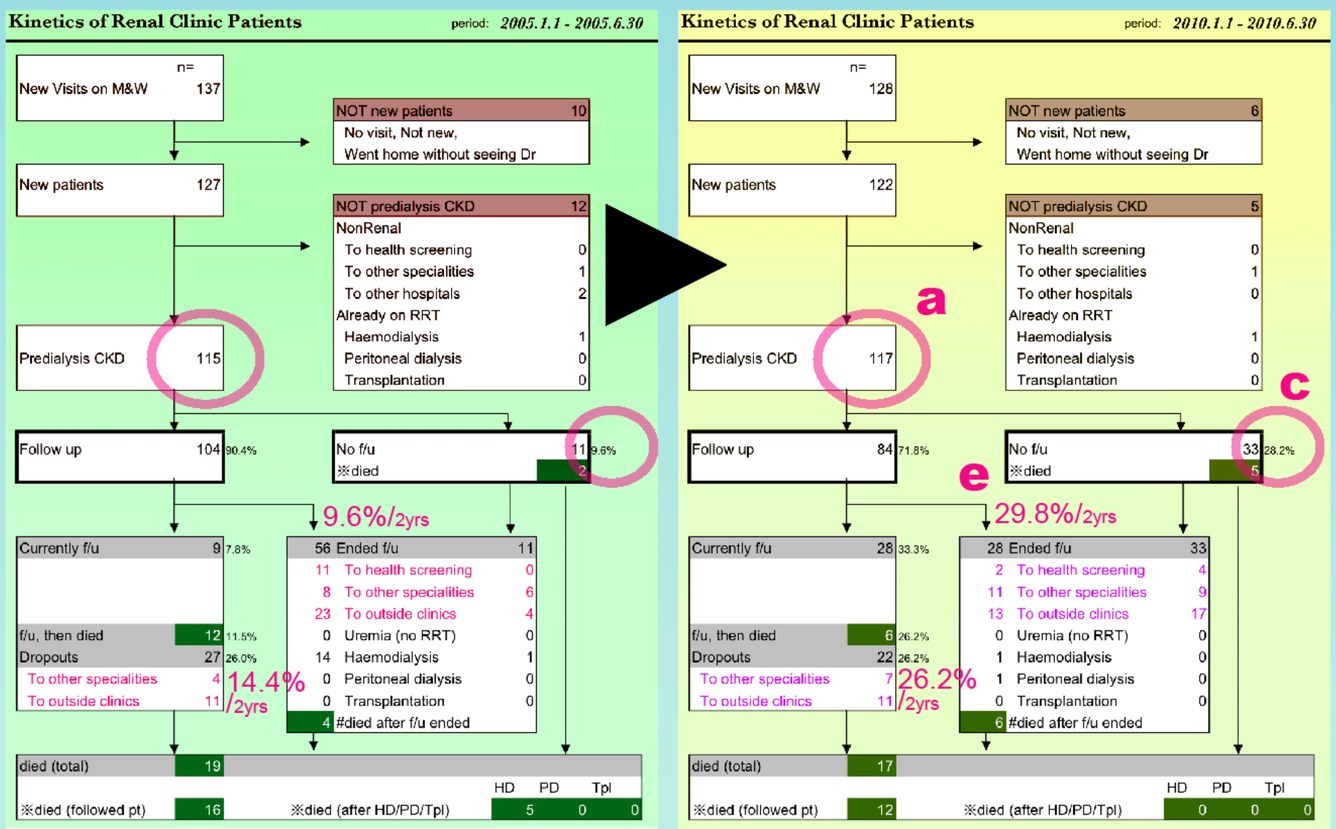
CONCLUSIONS

Implementation of eGFR has resulted in "backflow" of more severe renal patients to non-nephrologists.

	No of New Patients to Renal Clinic			
Year (1/1-12/31)	Total	Mon & Wed*	(%)	Events
2005	528	240	(45.5%)	eGFR equation (interim) suggested in Japan
2006	537	259	(48.2%)	
2007	452	226	(50.0%)	eGFR equation (revised) elaborated
2008	451	211	(46.8%)	eGFR equation announced to be used nationwide
2009	399	208	(52.1%)	
2010	482	233	(48.3%)	
2011	452	196	(43.4%)	
2012	482	238	(49.4%)	

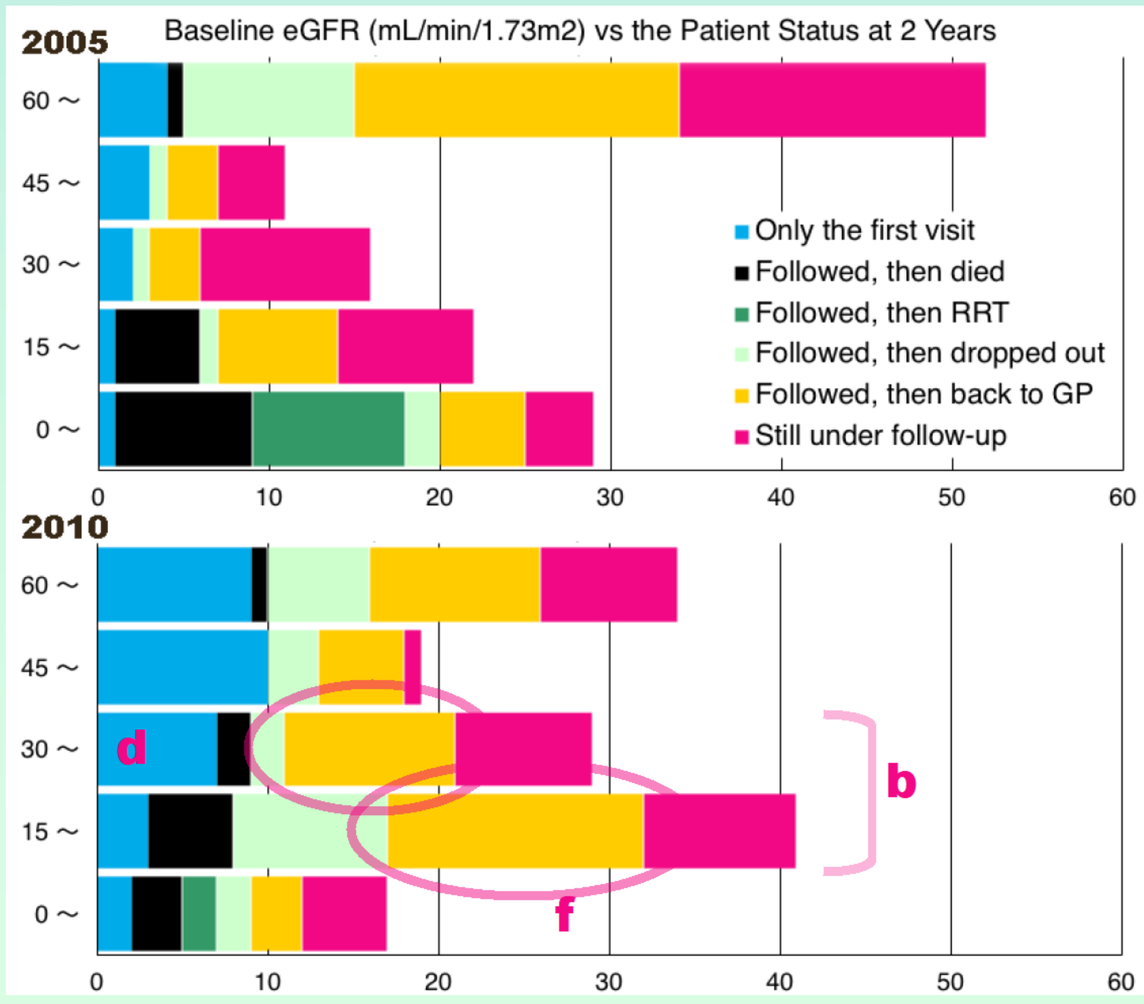
*A single physician (HT) took care of new renal patients on Mondays and Wednesdays; physicians on rotation did the renal clinic on the other weekdays.

Fig 1



The charts above show the final disposition of the patients at the end of 2012 Dec.
Percentages of "Follow up", "No f/u" and "Currently f/u" are against "Predialysis CKD", while those of "f/u, then died" and "Dropouts" are against "Follow up".
M&W: Monday & Wednesday, CKD: Chronic kidney disease, f/u: follow up, RRT: renal replacement therapy

Fig 2



GP: general practitioners, here including health screenings, other subspecialities and other clinics.

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