THE END OF THE CKD JOURNEY: RENAL REPLACEMENT THERAPY OR DEATH WITHOUT RRT: THE CKD.QLD EXPERIENCE.

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Introduction

Patients with established chronic kidney disease (CKD) exit the preterminal CKD state by starting RRT, or dying without receiving RRT. The latter might die from end stage kidney failure (ESKF), or from other causes. Those who start RRT are well defined through registries, such as ANZDATA, but those who die without RRT are less well characterised.

We tracked outcomes of a cohort of CKD patients in public renal practices in Queensland who were enrolled in the CKD.QLD registry, and compared those who started RRT with those who died without receiving RRT.

Methods

4,727 patients in CKD.QLD from 5 participating sites, mostly CKD stages 3b, 4 and 5, were followed from consent to the CKD.QLD registry until the start of RRT, death, or the censor date of June 30, 2016.

Outcomes and causes of death were ascertained from Queensland Health records though to June 2016. Follow up ranged from 0 to 5.1 years, median (IQR) of 3.09 (1.5 ,4.1 years) or a total of 13,236 person years.

By the censor date, 389 (8.2%) patients had started RRT, at a median age of 61.7 years, and 668 had died without RRT, at median age of 79 years.

Results

Figure 1 shows that the median (IQR) age at enrolment was 68.8 (57-58) yr. Males constituted 43%. 18% had GN or genetic renal disease, 25.3% diabetes and 30.6% had renalvascular disease.

Figure 2 shows that those who started RRT were among the younger people in the cohort, with median age of 61.7 (50-70) years. Males constituted 60%. GN and GRD were well represented (total 23%). Greater proportions had diabetic nephropathy (37.8%), and fewer had renal vascular disease (17.7%) than the original CKD.QLD cohort.

Figure 3 shows that those who died without RRT were much older than the group that went on to RRT, with median ages of 79 vs 61.7 years. Few had GN or GRD (total 4.9%), while the proportion with renalvascular disease was enriched (41.2%) compared with the original CKD.QLD cohort

Figure 4 shows the leading mentions among the causes of death in those who died without RRT (Most had multiple cause mentions). ESKF or CRF, chronic renal failure, here collectively called ESKF, was cause of death in 46.4%, AKI was a coexisting cause in 6.7%. 25% had no mention of CKD.

Cardiovascular disease was listed in 67.1% of persons, but pulmonary deaths, malignancies, sepsis, multi-organ failure and other conditions were also frequent underlying or associated causes.

Place of death was hospital for 69% of the whole non-RRT cohort, and for 80% of those who died with ESKF.

Figure 5. In an earlier publication, AIHW showed that as many Australians die with ESKF without RRT, as those who receive RRT, but at a much greater age. Our data mirror those findings.

Conclusions

There is a mild excess of males in this CKD cohort, and a more excess among those who start RRT. Our related work shows this is due to more marked progression of CKD in males than females (not shown here) .

More patients died without RRT (n=668) than started RRT (n=389) - ratio 1.7 to 1. Nearly half those who died without RRT had renal failure.

Cardiovascular events were very prominent among those deaths without RRT, but other common morbidities were also well represented.

Persons who died without RRT had an average survival more than 17 years longer than the dialysis–free survival of those who started RRT.

Notably, most who died without RRT had exceeded mean life expectancy of people born in the same era: eg life expectancy was 58 years for men and 62 for women people who were born in 1937. Most were therefore long term survivors within their birth cohorts, a reminder that the increasing prevalence of CKD is, in part, a function of increasing longevity.

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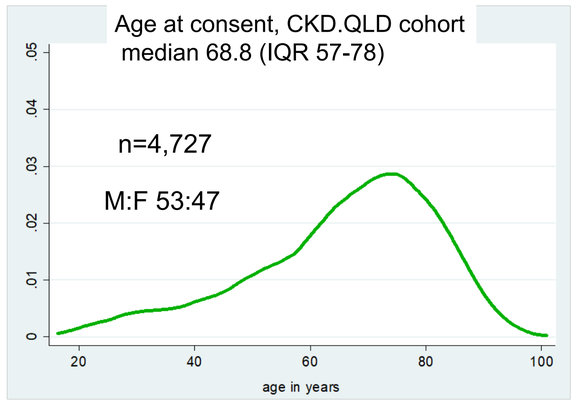
Figure 1



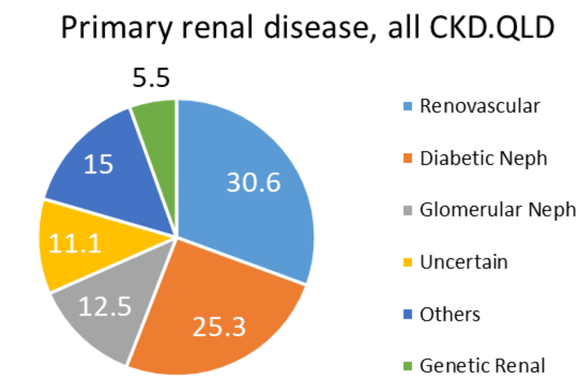
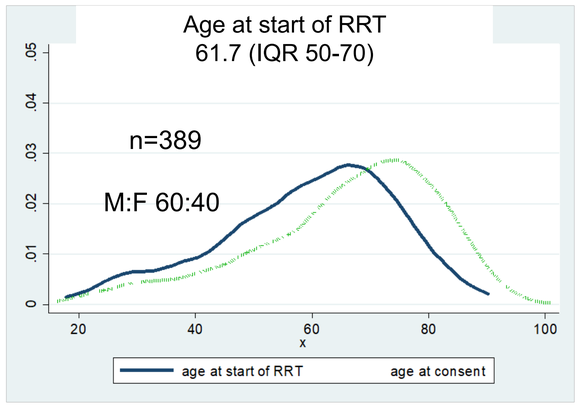


Figure 2.



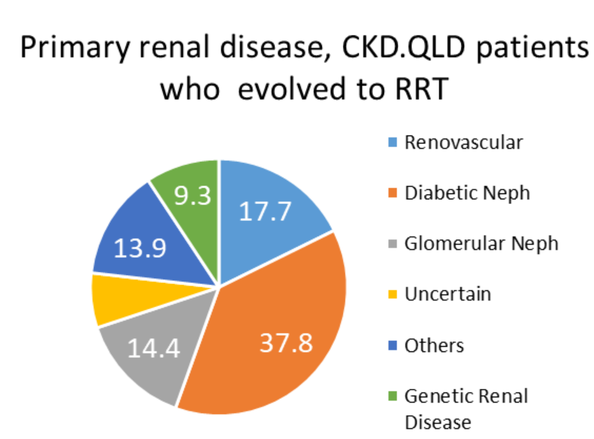
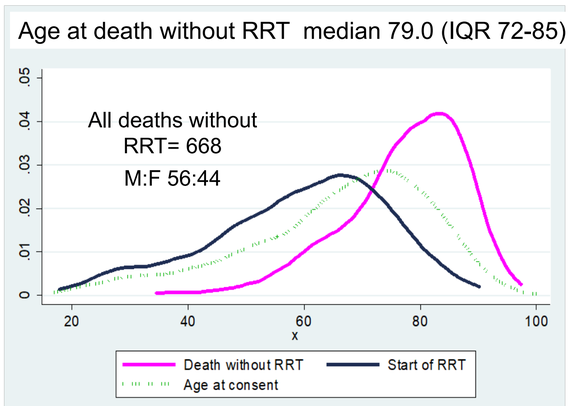


Figure 3.



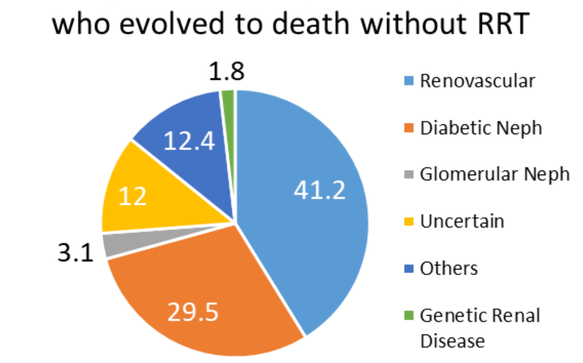


Figure 4

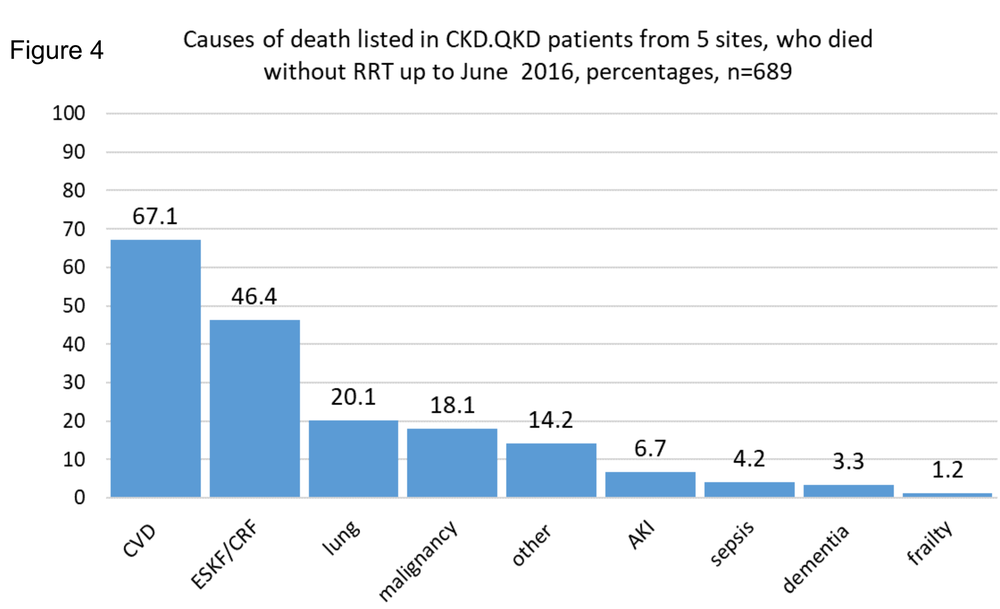
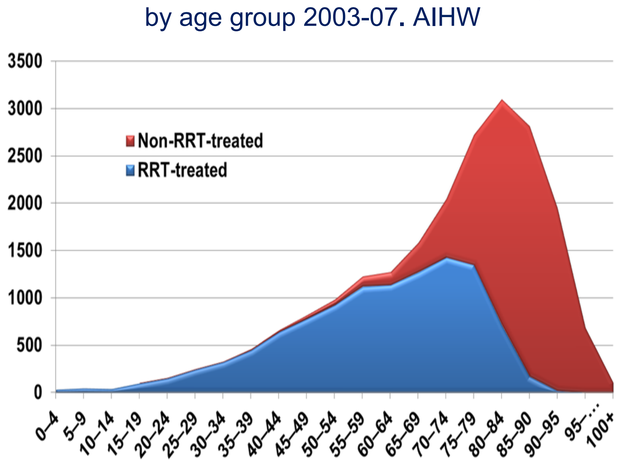
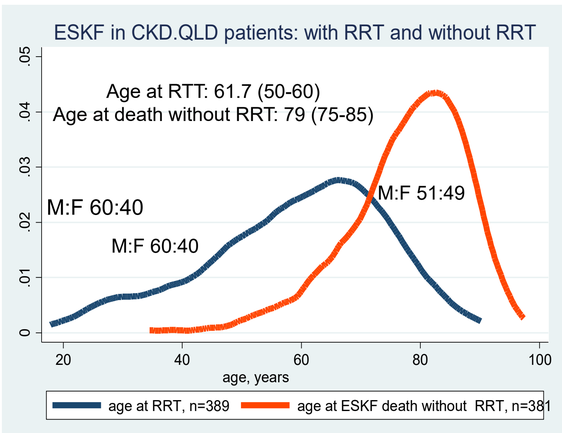


Figure 5





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