OncoNephrology and AKI: Cancer and non-cancer patient outcomes with AKI in hospital

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Background

- Patients with cancer are at higher risk for AKI
- Strong associations with both early and long-term morbidity and mortality with AKI
- OncoNephrology – overlap of these specialties

AIM: Effect of having cancer vs no cancer for AKI patients in hospital

Population

- All patients referred to the Renal service for AKI consult or admission at Prince of Wales Hospital, Sydney

Current study:

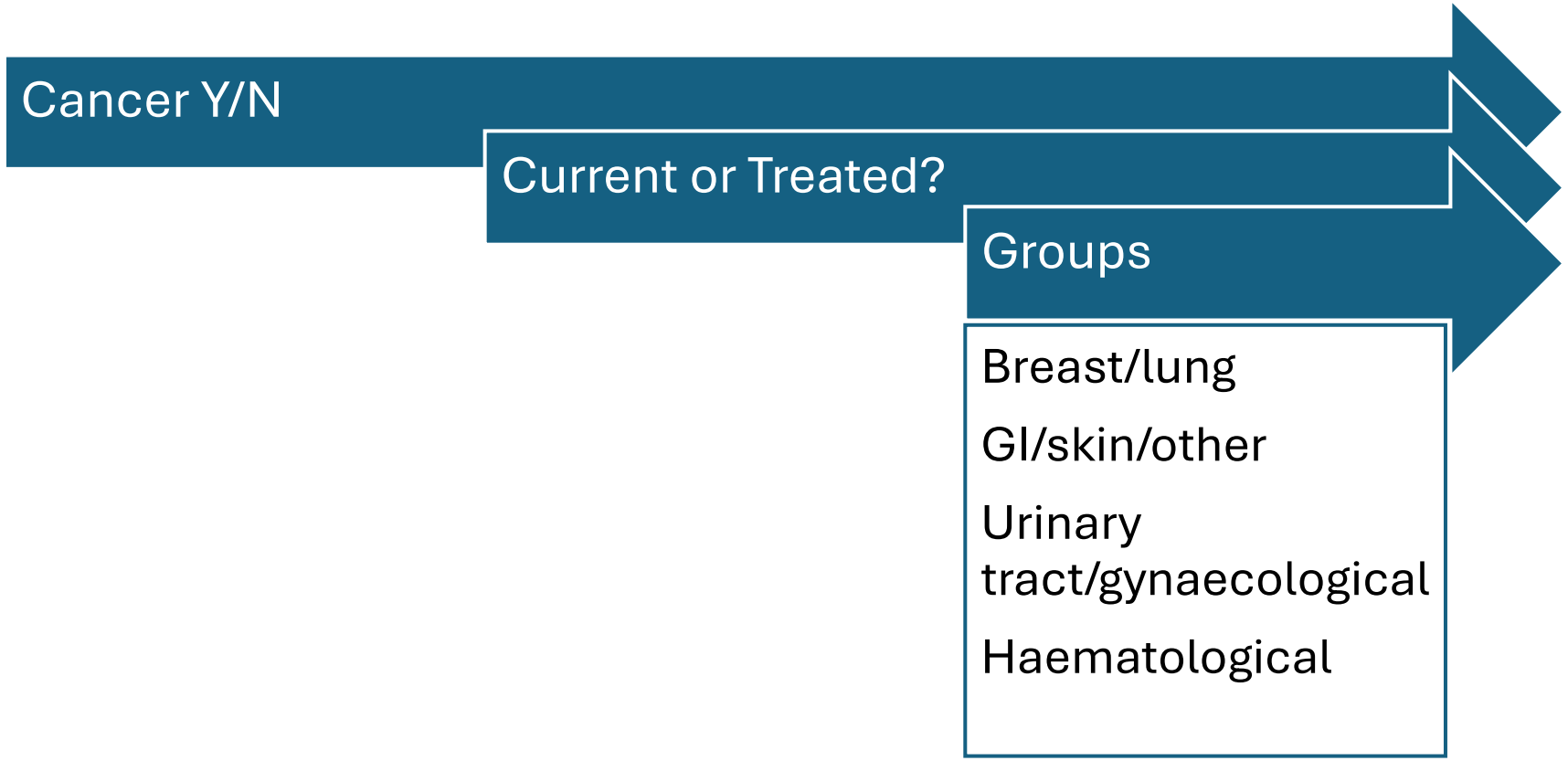
- Focusing on index AKI admission
- Discharged between Nov 2022 to March 2025
- 451 patients

Covariates

- Age and gender
- Comorbidities
- Medications
- Cause of AKI – LION
- AKI treatment
- Admitting team

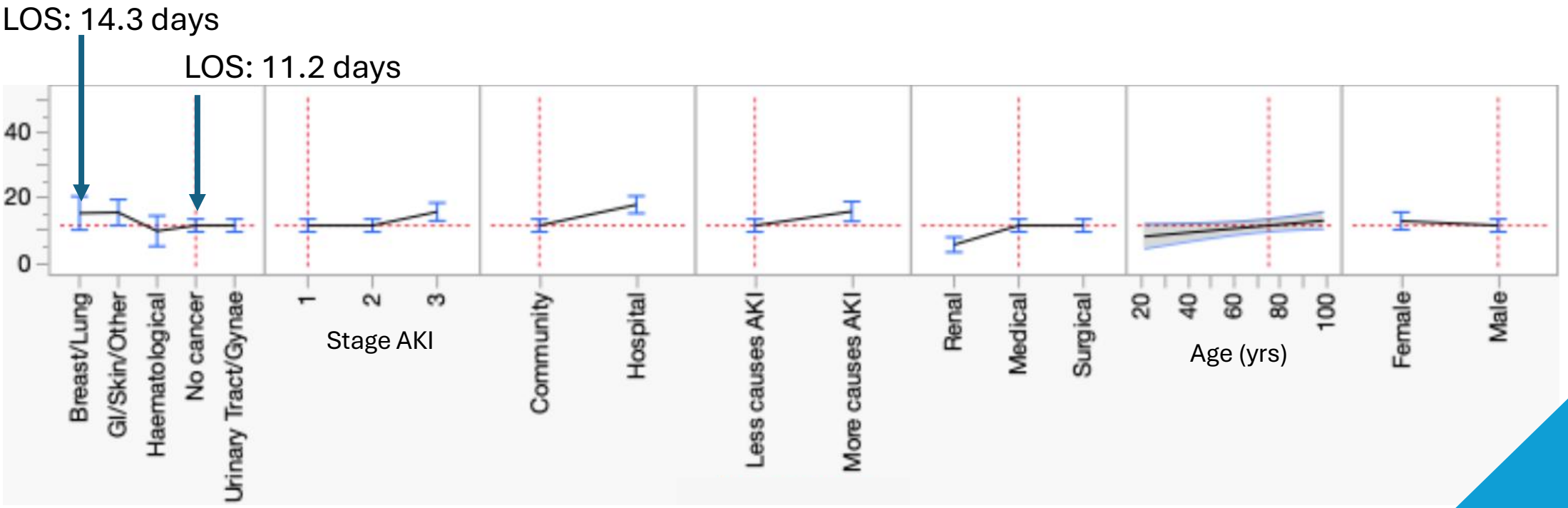
- Hospital vs community
- Creatinine (baseline, admission, peak, discharge)
- KDIGO stage AKI @ diagnosis and peak
- ICU, RRT, biopsy, imaging, proteinuria

How did we look at cancer?



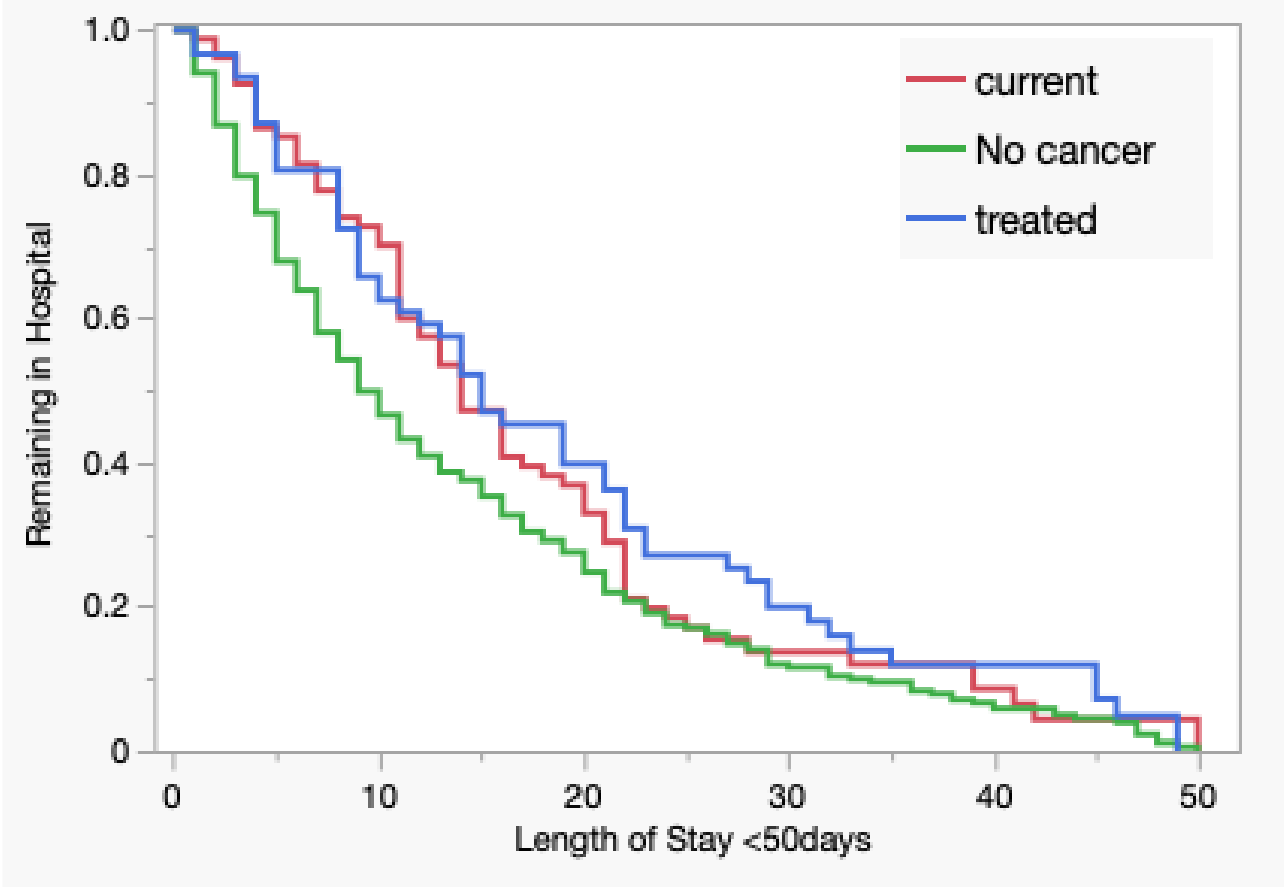
Demographics

Characteristic	n (%)
Age	75yrs (17-99) >65yrs: 314 (69.6%)
Female	163 (36%)
Cancer	151 (33.5%) 88 (58.3%) current; 63 (41.7%) treated
Length of stay	12 days (range: 1-425 days) 92% <50 days
Death	31/451 (6.9%) 9/88 (10.2%) current cancer 6/63 (9.5%) treated cancer 16/299 (5.4%) no cancer
AKI	Community 327 (73.2%) Stage at diagnosis 1 (52.8%), 2 (21.9%), 3 (25.2%) Biopsy 4.7%
ICU/RRT	ICU19.0%; RRT 9.9%



Cancer subgroup increases LOS

Cancer increases LOS



Median LOS:

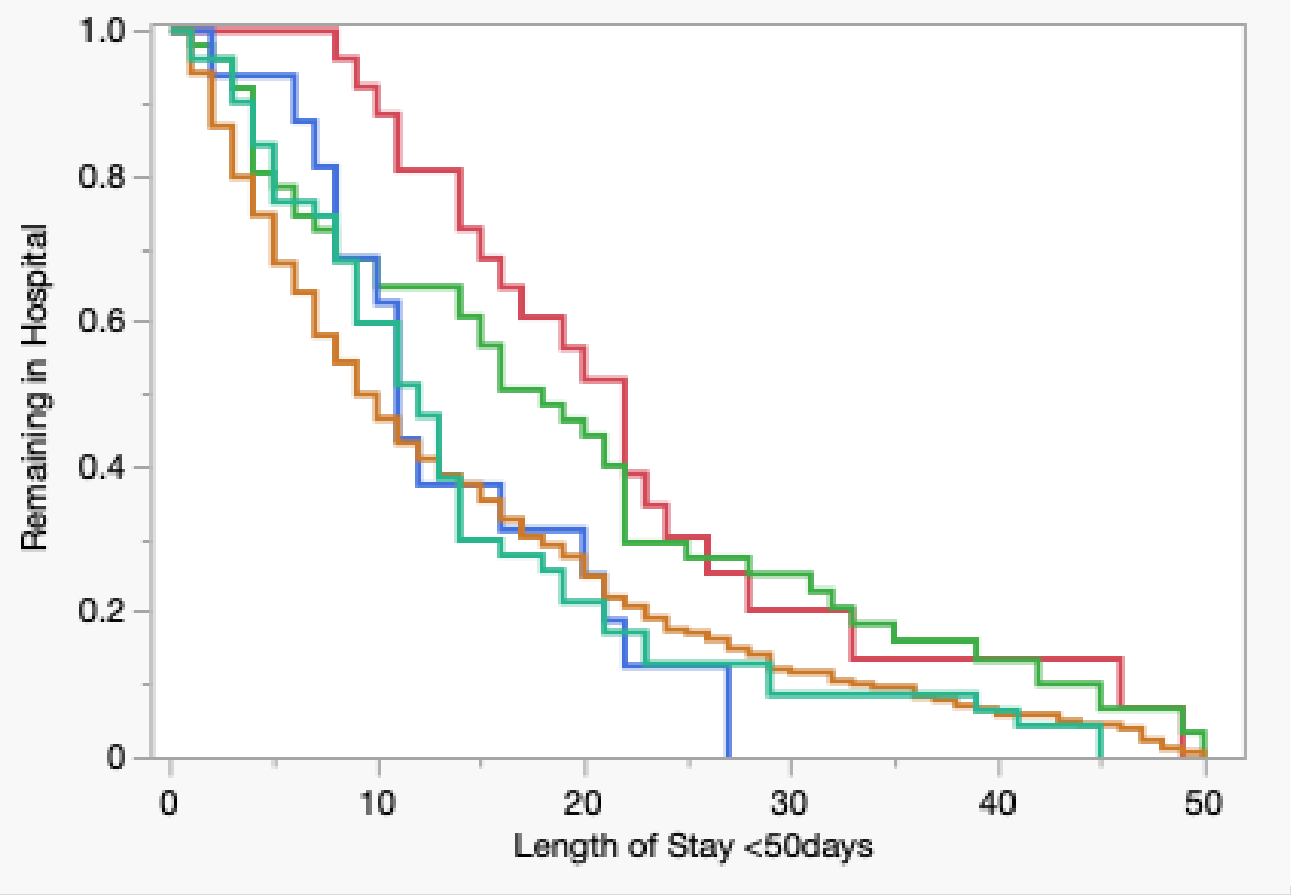
No cancer 9 days

Current 14 days

Treated 15 days

p<0.02

Breast/lung cancer increases LOS



p<0.01

Median LOS:

Breast/Lung 19.5 days

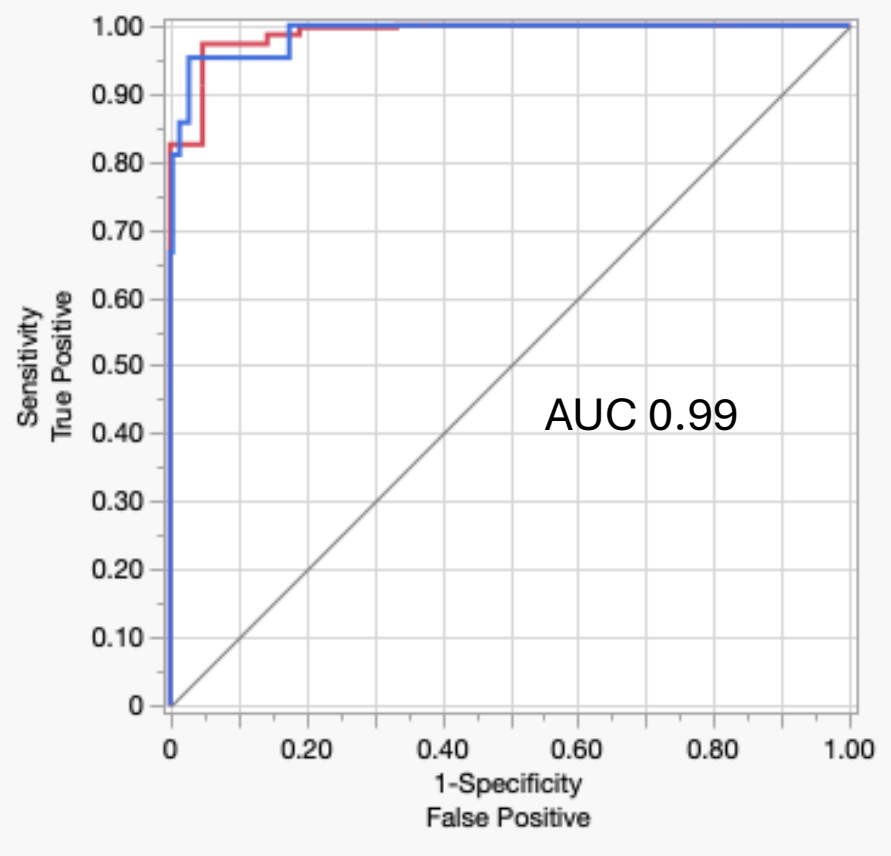
GI/skin/other 16 days

Haematological 11 days

Urinary tract/gynae 11 days

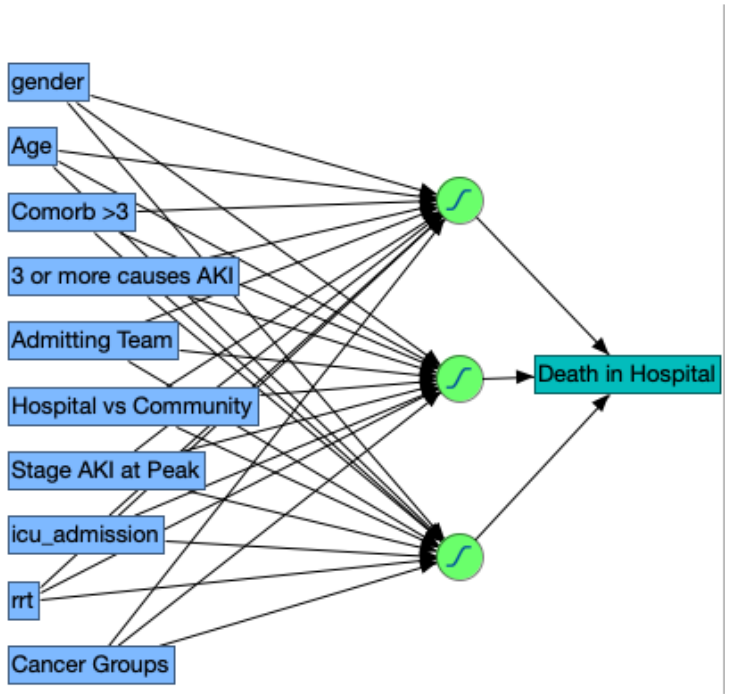
No cancer 9 days

Breast/lung cancer also predicts death



- Sensitivity 95.2%
- Specificity 97.3%

Breast/lung 10-fold higher risk than other cancers or no cancer



Limitations

- Small numbers
- AKI consults referred to Nephrology
  ~1200 episodes/yr at POW

Summary

Cancer increases in LOS and death in those with AKI

Breast/Lung cancer patients have the longest LOS

Other factors affecting LOS

Hospital acquired AKI	+ 8 days (& death)
Multifactorial AKI	+ 5 days
Stage 3 AKI	+ 5 days (& death)
Age	+ 0.6days/decade (& death)

Thank you

Dr Jonathan Erlich
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Previous AKI fellows – Dr Maria Mawaad and Dr Arunima Jain
Dr Eleanor Tripp
Australian Kidney Biomarker Lab

Questions?