

# Natural History of Large Renal Masses on Active Surveillance: Systematic Review of Available Case Series

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## BACKGROUND

- Active surveillance with radiographic monitoring for renal masses less than 4cm in size is a well-accepted management strategy in the older, comorbid patient.
- However, masses larger than 4cm are thought to have more aggressive biology and require urgent intervention.
- Few studies have evaluated the safety of active surveillance in renal masses larger than 4cm.

Objectives:

1. Evaluate existing literature on active surveillance of large renal masses (>4cm), to determine the rate of intervention, metastatic rate, cancer specific mortality, and overall mortality.
2. Examine tumor biology using growth rate as a surrogate.

## METHODS

Records identified through PubMed, OVID, Cochrane, Web of Science to create a renal mass database (n = 19,745)

Records identified through search of renal mass database using terms: "renal mass", "surveillance", "observation", and "growth rate" (n = 699)

Records after duplicates removed (n = 656)

Abstracts screened (n = 656)

Full-text articles assessed for eligibility (n = 28)

Studies included in systematic review (n = 6)

Abstracts excluded (n = 628)

- Reasons:
- No data on large renal masses
  - Active intervention
  - Abstract only
  - Observation period of < 6 months
  - Non-human study
  - Non-English study
  - Pediatric patient

## RESULTS

Table 2. Renal Mass Data from Individual Studies

	Mehrazin et al., 2014	Haramis et al., 2010	Mues et al., 2010	Stahler et al., 2009	Marzouk et al., 2018	Touma et al., 2018
<b>Patients (N)</b>	68	10	36	2	100	69
<b>Renal masses (N)</b>	72	10	42	2	100	69
<b>Age (M)</b>	70	73.8	73.8	65.2	73	75.5
<b>Tumor Size at Presentation (M)</b>	4.9	n/a	7.13	7	4.9	5.6
<b>Biopsy</b>	21	n/a	12	n/a	56	21
<b>Mean LGR (cm/yr)</b>	0.44	0.31	0.57	6.2	0.4	0.82
<b>Surgical Intervention (N patients)</b>	23	2	3	n/a	34	13
<b>Surveillance Time</b>	38.9	77.1	36	14.6	48	28.4
<b>Progression to Metastatic Disease</b>	0	0	2	n/a	10	23
<b>Death from RCC</b>	0	0	0	22	3	17
<b>Death from all causes</b>	9	n/a	4	n/a	30	35

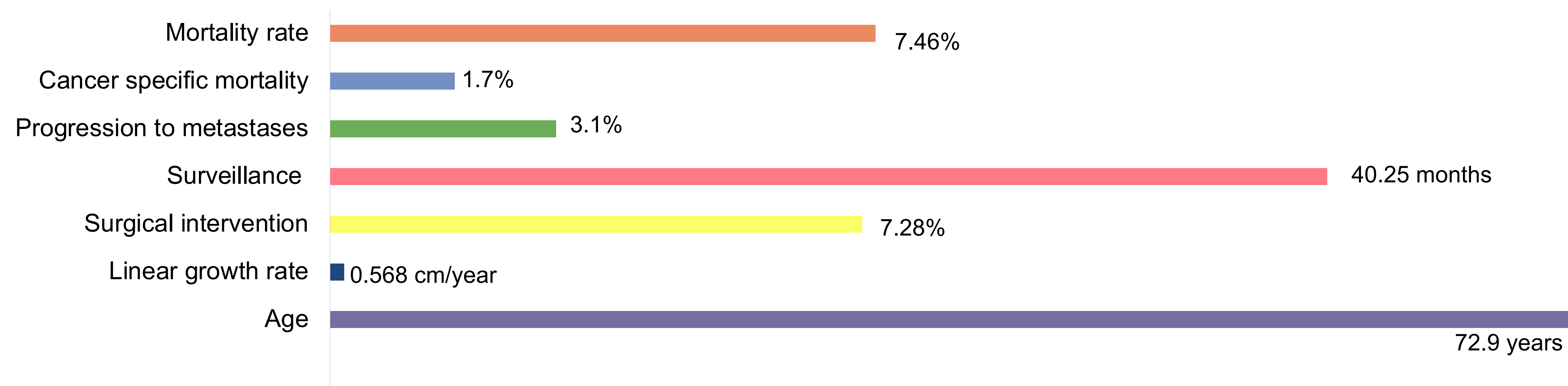


Figure 1. Pooled Renal Mass Data

## CONCLUSIONS

- Large renal masses, greater than 4cm, appear to have a more aggressive cancer biology than their smaller counterparts that are less than 4cm as reflected by a higher growth rate.
- However, metastatic rates and cancer specific mortality are low in carefully selected patients on active surveillance.