OBJECTIVES: Approximately 20% of metastatic renal cell carcinoma (mRCC) patients receiving 1st line (1LT) sunitinib experience disease progression (PD) identified by RECIST at 90 days of 1LT initiation. Earlier PD identification would minimize futile 1LT, facilitating a switch to potentially more effective 2nd line therapy. This current research is evaluating biomarkers that identify rapid PD (rPD). This study’s goal was to estimate the economic impact of utilizing an angiogenesis-specific imaging (AI) biomarker for early PD identification. METHODS: An economic model was tested for mRCC patients receiving 1LT sunitinib from a UK National Health System perspective was developed with a 90 day time horizon. Comparator arm used RECIST monitoring, the intervention arm an AI biomarker. Inputs included: timing of PD assessment (RECIST); sunitinib costs (£1,569 for 14 days; £6,950 for 90 days); other 1LT costs (£468 for 14 days, £1,861 for 90 days); and rPD rate of 20%. Outcomes included incremental length of futile 1LT and costs for AI vs. RECIST. RESULTS: For AI sensitivity of 50%, a 38 day reduction in futile 1LT could be achieved (€31,186). RECIST (AI sensitivity of 75%) of 1LT was 5.8 (CI95%: 5.5–6.0) years comparing with the dressing without NOSF. Additional QALY gain is 1.3 (CI95%: 1.2, 1.3). According to health care system perspective, the mean cost per patient at lifetime was €10,193 (CI95%: €9,174–€11,212) comparing with €18,352 (CI95%: €17,807, €18,897) using the dressing of reference. The probability of recurrences is considered. Monte Carlo simulation of 1000 patients was applied to compare face to face the situations which were not experimentally tested. The immediate endpoint was the median duration of 1LT. For the treatment with TLD-NOSF technology. CONCLUSIONS: According to the base case hypothesis the investigational innovation strategy TLD-NOSF is more effective and less costly than the reference dressing (neutral foam dressing).