**Objectives**

Immune escape plays an important role in renal tumor cells development, invasion and metastasis under immune surveillance. This study proposed to evaluate the key function of PAK1-mediated immune escape in renal cell carcinoma.

**Results**

The intratumoral PAK1 and p-PAK1 expressions correlated with clinical TNM stages \((p < 0.001)\), targeted therapy survivals \((p < 0.001)\), IL-8, Galectin-9 expression and local neutrophils infiltration. IL-8/CXCR1, the key chemokine signal axis of TANs, was conferred by high-PAK1 RCC cells. Furthermore, IL-8 and CXCR1 were also shown to be an independent prognostic indicator for OS \((p < 0.001 \text{ and } p=0.001)\) and RFS \((p < 0.001 \text{ and } p=0.001)\) in ccRCC patients. Using the LASSO model, PAK1 expression was negatively associated with CD8+ T cells and CD4+ T cells, and was positively associated with neutrophils in ccRCC patients. We also found that advanced tumors tended to harbor higher Galectin-9 levels, a key T cell inhibitory immune molecule correlated significantly with PAK1 levels.

**Conclusions**

In conclusion, PAK1 signaling based biomarker could improve survival prediction, and pave the way to the clinical investigation and drug discovery based on PAK1-mediated immune targeted therapy in high-risk ccRCC patients.