

RENAL CELL CARCINOMA CHEMOTHERAPY REGIMENS

The selection, dosing, and administration of anti-cancer agents and the management of associated toxicities are complex. Drug dose modifications and schedule and initiation of supportive care interventions are often necessary because of expected toxicities and because of individual patient variability, prior treatment, and comorbidities. Thus, the optimal delivery of anti-cancer agents requires a healthcare delivery team experienced in the use of such agents and the management of associated toxicities in patients with cancer. The chemotherapy regimens below may include both FDA-approved and unapproved uses/regimens and are provided as references only to the latest treatment strategies. Clinicians must choose and verify treatment options based on the individual patient.

General treatment notes:

- Targeted therapy using tyrosine kinase inhibitors is now widely used as first- and second-line treatments in renal cell carcinoma (RCC). To date, six such agents have been approved by the FDA for the treatment of advanced RCC: sunitinib, bevacizumab (+ interferon), pazopanib, temsirolimus, sorafenib, and everolimus.¹
- Prior to targeted therapies, systemic treatment options were limited to cytokine therapy, notably interleukin-2 and interferon- α -2A.¹

REGIMEN	DOSING
First-Line Targeted Therapies (for predominantly clear cell carcinoma)	
Sunitinib (Sutent) ^{2,3}	Sunitinib 50mg/day orally for 4 weeks on, and 2 weeks off.
Bevacizumab (Avastin) + interferon-α-2a (IFN- α -2a) ⁴⁻⁶	Bevacizumab 10mg/kg IV every 2 weeks plus IFN- α -2a 9 million IU SQ three times a week. Administer first bevacizumab infusion over 90 min; second over 60 min; all subsequent infusions over 30 min if 60-min infusion is tolerated.
Pazopanib (Votrient) ^{4, 7, 8}	Pazopanib 800mg orally once daily.
Temsirolimus (Torisel) ^{9, 10}	Temsirolimus 25mg IV once weekly administered over 30-60 min.
Sorafenib (Nexavar) ^{11, 12}	Sorafenib 400mg orally twice daily.
Second-Line Targeted Therapy After Failure With First-Line Targeted Therapies (for predominantly clear cell carcinoma)	
Everolimus (Afinitor) ^{13, 14}	Everolimus 10mg orally once daily.
Cytokine therapy	
High-dose interleukin-2 (IL-2) as first-line therapy ^{15, 16}	IL-2 720,000 IU/kg IV every 8 hrs (max 15 consecutive doses/cycle); treatments divided into 60-day courses, with each IV treatment course consisting of 2 cycles of therapy, separated by approximately 7-10 days of rest with no other therapy during the remainder of the 60 days. OR Days 1-5 and Days 15-19: IL-2 600,000 IU/kg IV every 8 hrs (max 14 doses). Repeat cycle every 4 weeks for max 3 cycles.
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