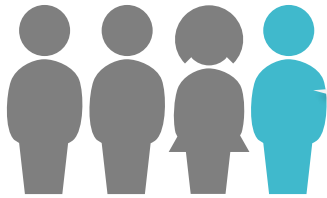




# TREATMENTS FOR ADVANCED RENAL CELL CARCINOMA



Around **400 people** are diagnosed with **kidney cancer every year**. This condition affects 2 times more men than women.<sup>1</sup>

**One in four** patients<sup>1</sup> have cancer that has spread outside of the kidney to other parts of the body, which is known as **advanced kidney cancer**.

There are different types of kidney cancer depending on which cells are affected. **Renal cell carcinoma (RCC)** is the most common type.

## How is advanced RCC treated?

Treatment **options** depend on the patient's condition and the number of risk factors that they have. Local doctors usually recommend **targeted therapy** either on its own or with **immunotherapy** as **initial** treatment for patients with advanced RCC.

For patients whose cancer has **come back** or worsened after previous treatments, doctors usually recommend targeted therapy or immunotherapy **alone**.

### Local treatment options include:

Immunotherapy

Chemotherapy

Radiotherapy

Surgery

Targeted therapy

Also known as **immuno-oncology (IO)** drugs, immunotherapy helps the immune system **find** and kill cancer cells.

There are **4** immunotherapies approved for use in Singapore for patients with **advanced** RCC.

**Targeted therapy** are drugs that **block** specific proteins that help the cancer **grow**. These drugs slow or **stop** the growth of cancer cells.

There are **4** targeted therapies commonly used to treat patients who have **advanced** RCC. These drugs are known as **tyrosine kinase inhibitors (TKIs)**.



Avelumab



Ipilimumab



Nivolumab



Pembrolizumab



Axitinib



Cabozantinib



Pazopanib



Sunitinib

Legend: Tablets Capsules Slow drip into a vein

Published studies show that these 8 drugs are **effective** treatments for RCC.

They have **different** side effects from each other.

▶ For patients with **newly diagnosed** RCC, IO/TKI combinations (**avelumab with axitinib, nivolumab with cabozantinib, and pembrolizumab with axitinib**), and **nivolumab with ipilimumab** are likely to be **more effective** than TKIs alone in **extending** the length of time patients with advanced RCC can live without their cancer getting worse.

▶ For patients whose cancer has **come back** after previous treatments, **axitinib, cabozantinib** and **nivolumab** are **effective** treatment options.



ACE reviewed all available clinical evidence and received clinical advice from doctors for each treatment. ACE also negotiated prices with the companies.<sup>2,3</sup>

**Axitinib, cabozantinib, pazopanib and nivolumab** used on their own and combination treatments **avelumab with axitinib** and **nivolumab with ipilimumab** were the best value for money (most cost-effective) at the prices proposed by the companies.



**Cash or MediSave** needed **every month** after subsidy and MediShield Life for a **middle-income patient** receiving **outpatient** treatment at **public hospitals\***:

Axitinib	<b>\$100 to \$200</b>	Subsidised ✓ MediShield Life: \$1000 ✓
Cabozantinib	<b>\$100 to \$200</b>	Subsidised ✓ MediShield Life: \$1800 ✓
Pazopanib	<b>\$100 to \$200</b>	Subsidised ✓ MediShield Life: \$1600 ✓
Nivolumab	<b>\$100 to \$900<sup>#</sup></b>	Subsidised ✓ MediShield Life: \$1800 ✓
Avelumab + axitinib	<b>\$200 to \$900<sup>#</sup></b>	Subsidised ✓ MediShield Life: \$ 3000 ✓
Nivolumab + ipilimumab	<b>\$200 to \$900<sup>^</sup></b>	Subsidised ✓ MediShield Life: \$5200 ✓
Pembrolizumab + axitinib	<b>\$2,500 to \$6,500<sup>^</sup></b>	Subsidised ✗ MediShield Life: \$3000 ✓
Cabozantinib + nivolumab	<b>\$6,000 to \$9,000<sup>#</sup></b>	Subsidised ✗ MediShield Life: \$1800 ✓
Sunitinib	<b>\$7,500 to \$8,000</b>	Subsidised ✗ MediShield Life: \$1600 ✓

**Axitinib alone or in combination with avelumab; cabozantinib; nivolumab alone or in combination with ipilimumab; and pazopanib** were **recommended** for government funding<sup>4</sup> because they are **effective** and provide good value for money for treating RCC.

Sunitinib, and the IO/TKI combinations cabozantinib with nivolumab, and pembrolizumab with axitinib were **not recommended** for subsidy because their benefits do not justify their costs at the prices offered by the companies. MediShield Life is **available** to help with some of the cost of these treatments.

Talk to your **doctor** to discuss which treatment is suitable for you. You can also speak to a **medical social worker** if you need further financial assistance for any of these treatments.



\* Expenses will differ according to the amount of medicine that each patient needs and does not include other costs for doctor consultations, medical tests etc. MediSave withdrawal is capped at \$600 per month for these treatments. For Singaporeans who are eligible for subsidy, treatment costs will be subsidised by 40% to 75%. For subsidised drugs, expenses have been calculated using prices proposed by the companies including patient assistance programmes. For non-subsidised drugs, prices at public healthcare institutions at the time of subsidy review were used. # Avelumab and nivolumab are given once every 2 weeks, so patients will require 2 treatments per month for most months and up to 3 treatments per month occasionally. ^ For these treatments, ipilimumab, nivolumab and pembrolizumab are given once every 3 weeks, so patients will require 1 treatment per month for most months and up to 2 treatments per month for some months.

Sources:

1. Health Promotion Board National Registry of Diseases Office. Singapore Cancer Registry 50<sup>th</sup> Anniversary Monograph 1968 – 2017.
2. ACE Technology Guidance Plain English Summary, Treatments for advanced renal cell carcinoma. 31 Aug 2022.
3. ACE Technology Guidance, Cabozantinib in combination with nivolumab for previously untreated advanced renal cell cancer. 31 Aug 2022.
4. Ministry of Health, Singapore. Cancer Drug List.



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