

To estimate the **Potential Peak Sales** for **idecabtagene vicleucel (Abecma)** in the indication of relapsed or refractory multiple myeloma (RRMM) in the US, EU5 (Germany, France, Italy, Spain, UK), China, and Japan, as well as the **\$ value of a 1% share of treated patients** in these geographies, we need to make several assumptions and follow a structured approach. Since exact data on patient populations, pricing, and penetration rates may not be publicly available in real-time, I will base this analysis on reasonable estimates and publicly available information as of my knowledge cutoff (October 2023). The calculations will be transparent, and you can adjust the inputs based on more specific or updated data.

Step 1: Define the Target Patient Population

Idecabtagene vicleucel is approved for adult patients with RRMM after four or more prior lines of therapy (4L+). We need to estimate the eligible patient population in each geography.

Incidence and Prevalence of Multiple Myeloma (MM)

- **US:** Approximately 35,000 new cases of MM are diagnosed annually, with a prevalence of around 150,000 patients. About 20-30% of MM patients progress to 4L+ RRMM over time.
- **EU5:** Combined incidence is around 40,000 new cases annually, with a prevalence of ~170,000. Similar progression rates to 4L+ (20-30%).
- **China:** Incidence is lower due to underdiagnosis, estimated at 20,000 new cases annually, with a prevalence of ~80,000. Progression to 4L+ is likely lower (~15-20%) due to limited access to multiple lines of therapy.
- **Japan:** Incidence is ~9,000 new cases annually, with a prevalence of ~40,000. Progression to 4L+ is ~20-25%.

Eligible 4L+ RRMM Patients (Annual Incident Population)

Using progression rates:

- **US:** ~7,500-10,000 patients (25% of 35,000 incident cases, adjusted for progression).
- **EU5:** ~8,000-12,000 patients (25% of 40,000 incident cases).
- **China:** ~3,000-4,000 patients (15-20% of 20,000 incident cases, adjusted for access).
- **Japan:** ~1,800-2,250 patients (20-25% of 9,000 incident cases).

Total eligible patients annually: ~20,300-28,250 across all geographies.

Step 2: Market Share Assumption

The problem assumes a **20-30% share of treated patients** for idecabtagene vicleucel. This accounts for competition from other therapies (e.g., other CAR-T therapies like ciltacabtagene autoleucel, bispecific antibodies, and standard of care) and access barriers (e.g., cost, manufacturing slots, and hospital infrastructure).

Step 3: Pricing of Idecabtagene Vicleucel

- In the US, idecabtagene vicleucel is priced at approximately **\$419,500 per patient** (based on initial launch pricing). Pricing in other regions is typically lower due to healthcare system negotiations and

cost controls:

- **EU5:** ~\$300,000-\$350,000 per patient (estimated 70-80% of US price).
- **Japan:** ~\$350,000 per patient (similar to EU5, adjusted for market).
- **China:** ~\$200,000-\$250,000 per patient (lower due to pricing pressures and access programs).

Step 4: Calculate Potential Peak Sales

Peak sales are calculated as:

Peak Sales = Eligible Patients × Market Share × Price per Patient

US

- Eligible patients: 7,500-10,000
- Market share: 20-30% → 1,500-3,000 treated patients
- Price: \$419,500
- Peak Sales: **\$629M - \$1,259M**

EU5

- Eligible patients: 8,000-12,000
- Market share: 20-30% → 1,600-3,600 treated patients
- Price: \$325,000 (midpoint of \$300K-\$350K)
- Peak Sales: **\$520M - \$1,170M**

China

- Eligible patients: 3,000-4,000
- Market share: 20-30% → 600-1,200 treated patients
- Price: \$225,000 (midpoint of \$200K-\$250K)
- Peak Sales: **\$135M - \$270M**

Japan

- Eligible patients: 1,800-2,250
- Market share: 20-30% → 360-675 treated patients
- Price: \$350,000
- Peak Sales: **\$126M - \$236M**

Total Peak Sales Across Geographies

- Low end (20% share): \$629M (US) + \$520M (EU5) + \$135M (China) + \$126M (Japan) = **\$1,410M (~\$1.41B)**

- High end (30% share): \$1,259M (US) + \$1,170M (EU5) + \$270M (China) + \$236M (Japan) = **\$2,935M (~\$2.94B)**

Potential Peak Sales Range: \$1.41B - \$2.94B annually

Step 5: Calculate \$ Value of 1% Share of Treated Patients

A 1% share of treated patients corresponds to 1% of the eligible patient population being treated with idecabtagene vicleucel.

US

- Eligible patients: 7,500-10,000
- 1% share: 75-100 patients
- Price: \$419,500
- Value of 1% share: **\$31.5M - \$42.0M**

EU5

- Eligible patients: 8,000-12,000
- 1% share: 80-120 patients
- Price: \$325,000
- Value of 1% share: **\$26.0M - \$39.0M**

China

- Eligible patients: 3,000-4,000
- 1% share: 30-40 patients
- Price: \$225,000
- Value of 1% share: **\$6.8M - \$9.0M**

Japan

- Eligible patients: 1,800-2,250
- 1% share: 18-22.5 patients
- Price: \$350,000
- Value of 1% share: **\$6.3M - \$7.9M**

Total Value of 1% Share Across Geographies

- Low end: \$31.5M (US) + \$26.0M (EU5) + \$6.8M (China) + \$6.3M (Japan) = **\$70.6M**
- High end: \$42.0M (US) + \$39.0M (EU5) + \$9.0M (China) + \$7.9M (Japan) = **\$97.9M**

Value of 1% Share Range: \$70.6M - \$97.9M

Final Answer

1. **Potential Peak Sales for Idecabtagene Vicleucel (20-30% share) in RRMM:**

- US, EU5, China, and Japan combined: **\$1.41B - \$2.94B annually**

2. **\$ Value of 1% Share of Treated Patients:**

- US, EU5, China, and Japan combined: **\$70.6M - \$97.9M**

Notes and Caveats

- These estimates are based on approximate patient numbers, pricing, and market share assumptions. Real-world factors like reimbursement, competition, manufacturing capacity, and patient access could significantly alter these figures.

- Peak sales may take several years to achieve due to ramp-up in adoption and infrastructure for CAR-T therapies.

- Pricing in China and other markets may vary widely based on local negotiations and potential partnerships.

- If you have access to more specific data (e.g., exact patient numbers, updated pricing, or market share forecasts), the calculations can be refined accordingly.

Let me know if you'd like to adjust any assumptions or dive deeper into a specific geography or factor!