

To estimate the **Potential Peak Sales** for teclistamab-cqyv (Tecvayli) 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 follow a structured approach. Since exact data on patient populations, pricing, and market dynamics may not be fully available, I will use reasonable assumptions based on publicly available information, market research trends, and typical methodologies for such estimates. Here's the step-by-step analysis:

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## **Key Indication and Patient Population**

- **Indication:** Relapsed or refractory multiple myeloma (RRMM) in adult patients who have received at least 4 prior lines of therapy (heavily pre-treated population).

- **Target Population:** This is a niche population within the broader multiple myeloma (MM) patient pool, as it focuses on later-line therapy (4+ lines).

### **#### Step 1: Estimate the Eligible Patient Population**

We first estimate the number of RRMM patients eligible for teclistamab-cqyv in the specified geographies. Multiple myeloma incidence and prevalence data are used as a starting point, with adjustments for the proportion of patients in later lines of therapy.

#### **- US:**

- Annual MM incidence: ~35,000 new cases (American Cancer Society).

- Prevalence (existing patients): ~130,000 (based on 5-year survival rates and chronic nature of MM).

- RRMM patients in 4+ lines: ~10-15% of prevalence, i.e., ~13,000–19,500 patients (heavily pre-treated).

#### **- EU5:**

- Annual MM incidence: ~40,000 new cases (combined across EU5).

- Prevalence: ~150,000 patients.

- RRMM patients in 4+ lines: ~15,000–22,500 patients.

#### **- Japan:**

- Annual MM incidence: ~9,000 new cases.

- Prevalence: ~30,000 patients.

- RRMM patients in 4+ lines: ~3,000–4,500 patients.

#### **- China:**

- Annual MM incidence: ~20,000 new cases (lower per capita incidence due to demographics and underdiagnosis).

- Prevalence: ~70,000 patients.

- RRMM patients in 4+ lines: ~7,000–10,500 patients.

**Total Eligible Patients (midpoint estimate):**

- US: ~16,000
- EU5: ~18,750
- Japan: ~3,750
- China: ~8,750
- **Total:** ~47,250 patients across all geographies.

**#### Step 2: Estimate Market Share (20%-30% of Treated Patients)**

As per the query, assume teclistamab-cqyv captures **20%-30% of treated patients** in this indication. Not all eligible patients may receive treatment due to access, cost, or clinical factors, so we assume ~80% of eligible patients are treated.

- **Treated Patients:**  $47,250 \times 80\% = \sim 37,800$  patients.
- **Market Share for Teclistamab-cqyv:**
  - At 20%:  $37,800 \times 20\% = \sim 7,560$  patients.
  - At 30%:  $37,800 \times 30\% = \sim 11,340$  patients.

**#### Step 3: Estimate Annual Cost of Therapy**

Teclistamab-cqyv is a novel bispecific antibody therapy, and pricing for such therapies in RRMM (e.g., CAR-T therapies like Abecma or other BCMA-targeted therapies) typically ranges between **\$300,000 and \$500,000 per patient per year** in the US for initial treatment and follow-up. Pricing in other regions is generally lower due to healthcare system differences:

- **US:** ~\$400,000 per patient/year (midpoint estimate).
- **EU5:** ~\$300,000 per patient/year (discounted due to payer negotiations).
- **Japan:** ~\$350,000 per patient/year (similar to US but slightly lower).
- **China:** ~\$150,000 per patient/year (significant discount due to market access and affordability constraints).

**#### Step 4: Calculate Potential Peak Sales**

Using the number of patients treated with teclistamab-cqyv (at 20% and 30% market share) and the regional pricing, we calculate peak sales.

**Breakdown by Geography (assuming proportional patient distribution):**

- US:  $16,000/47,250 \approx 34\%$  of total patients.
- EU5:  $18,750/47,250 \approx 40\%$  of total patients.
- Japan:  $3,750/47,250 \approx 8\%$  of total patients.
- China:  $8,750/47,250 \approx 18\%$  of total patients.

**Peak Sales at 20% Market Share (7,560 patients):**

- US:  $7,560 \times 34\% \times \$400,000 = \sim \$1.03$  billion.
- EU5:  $7,560 \times 40\% \times \$300,000 = \sim \$0.91$  billion.
- Japan:  $7,560 \times 8\% \times \$350,000 = \sim \$0.21$  billion.
- China:  $7,560 \times 18\% \times \$150,000 = \sim \$0.20$  billion.
- **Total Peak Sales (20% share):**  $\sim \$2.35$  billion.

**Peak Sales at 30% Market Share (11,340 patients):**

- US:  $11,340 \times 34\% \times \$400,000 = \sim \$1.54$  billion.
- EU5:  $11,340 \times 40\% \times \$300,000 = \sim \$1.36$  billion.
- Japan:  $11,340 \times 8\% \times \$350,000 = \sim \$0.32$  billion.
- China:  $11,340 \times 18\% \times \$150,000 = \sim \$0.31$  billion.
- **Total Peak Sales (30% share):**  $\sim \$3.53$  billion.

**Potential Peak Sales Range: \$2.35 billion to \$3.53 billion** annually across the US, EU5, China, and Japan.

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

- Total treated patients:  $\sim 37,800$ .
- 1% of treated patients:  $37,800 \times 1\% = 378$  patients.

**Revenue from 1% Share by Geography:**

- US:  $378 \times 34\% \times \$400,000 = \sim \$51.4$  million.
- EU5:  $378 \times 40\% \times \$300,000 = \sim \$45.4$  million.
- Japan:  $378 \times 8\% \times \$350,000 = \sim \$10.6$  million.
- China:  $378 \times 18\% \times \$150,000 = \sim \$10.2$  million.
- **Total \$ Value of 1% Share:**  $\sim \$117.6$  million.

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## **Final Answer**

1. **Potential Peak Sales for Teclistamab-cqyv** in the US, EU5, China, and Japan for the RRMM indication (20%-30% market share): **\$2.35 billion to \$3.53 billion annually.**

2. **\$ Value of 1% Share of Treated Patients** in these geographies:  **$\sim \$117.6$  million.**

## **Caveats and Assumptions**

- Patient population estimates are based on general MM prevalence and assumptions about the proportion in 4+ lines of therapy.

- Pricing is assumed based on comparable therapies (e.g., BCMA-targeted CAR-T therapies) and may vary by region or over time due to competition, payer negotiations, or biosimilar entry.
- Market share assumptions (20%-30%) are as per the query and do not account for competitive dynamics (e.g., other BCMA therapies like CAR-T or other bispecifics).
- Peak sales are assumed to be achieved after market penetration stabilizes, typically 3-5 years post-launch, and do not account for potential indication expansion or off-label use.

If more specific data on pricing, patient numbers, or market dynamics is available, these estimates can be refined further.