

To estimate the **Potential Peak Sales** for tarlatamab-dlle (Imdelltra) in the indication of extensive stage small cell lung cancer (ES-SCLC) with disease progression on or after platinum-based chemotherapy, and to calculate the **\$ value of a 1% share of treated patients** in the US, EU5 (Germany, France, Italy, Spain, UK), China, and Japan, we need to follow a structured approach. Since specific data on pricing, patient population, and market penetration may not be fully available, I will outline the methodology, make reasonable assumptions based on publicly available data, and provide a framework for the calculation. The final numbers are illustrative and should be refined with more precise data.

## **Step 1: Define the Target Patient Population**

ES-SCLC accounts for approximately 70% of small cell lung cancer (SCLC) cases, and a significant portion of these patients progress after first-line platinum-based chemotherapy. We need to estimate the number of eligible patients in each geography.

#### Incidence of SCLC and ES-SCLC:

- **US:** Annual incidence of lung cancer is ~225,000 cases, with SCLC accounting for ~15% (~33,750 cases). Of these, ~70% are ES-SCLC (~23,625 cases). Assuming ~60-70% progress after first-line therapy, the eligible population is ~14,175-16,538 patients.
- **EU5:** Combined lung cancer incidence is ~300,000 cases annually, with SCLC at ~15% (~45,000 cases). ES-SCLC is ~31,500 cases, and ~60-70% progress (~18,900-22,050 patients).
- **China:** Lung cancer incidence is ~800,000 cases, with SCLC at ~15% (~120,000 cases). ES-SCLC is ~84,000 cases, and ~60-70% progress (~50,400-58,800 patients).
- **Japan:** Lung cancer incidence is ~125,000 cases, with SCLC at ~15% (~18,750 cases). ES-SCLC is ~13,125 cases, and ~60-70% progress (~7,875-9,188 patients).

For simplicity, let's take the midpoint of the progression range:

- US: ~15,356 patients
- EU5: ~20,475 patients
- China: ~54,600 patients
- Japan: ~8,531 patients
- **Total:** ~99,000 patients across these geographies.

#### Treated Patient Share:

The problem assumes a 20-30% share of treated patients for tarlatamab-dlle. This accounts for market competition, physician adoption, and access barriers. Let's calculate for both ends of the range:

- **20% share:** ~19,800 patients treated
- **30% share:** ~29,700 patients treated

## **Step 2: Estimate Drug Pricing**

Tarlatamab-dlle is a novel bispecific T-cell engager (BiTE) therapy, and pricing for such innovative oncology drugs is typically high. Based on similar therapies (e.g., Amgen's Blincyto for leukemia, priced

at ~\$178,000 per course), we can assume a price range for tarlatamab-dlle. However, pricing varies by geography due to healthcare systems and reimbursement policies.

Assumed annual cost per patient (or per treatment course):

- **US:** \$200,000 (higher due to market dynamics)
- **EU5:** \$150,000 (lower due to price negotiations and universal healthcare)
- **China:** \$80,000 (emerging market pricing, limited reimbursement)
- **Japan:** \$150,000 (similar to EU5, with high adoption of novel therapies)

### **Step 3: Calculate Potential Peak Sales**

Peak sales are calculated as: (Number of treated patients in each geography) × (Price per patient in that geography).

#### At 20% Treated Patient Share:

- **US:**  $15,356 \times 20\% = 3,071$  patients  $\times$  \$200,000 = **\$614.2 million**
- **EU5:**  $20,475 \times 20\% = 4,095$  patients  $\times$  \$150,000 = **\$614.3 million**
- **China:**  $54,600 \times 20\% = 10,920$  patients  $\times$  \$80,000 = **\$873.6 million**
- **Japan:**  $8,531 \times 20\% = 1,706$  patients  $\times$  \$150,000 = **\$255.9 million**
- **Total Peak Sales at 20% share: \$2,358 million (~\$2.36 billion)**

#### At 30% Treated Patient Share:

- **US:**  $15,356 \times 30\% = 4,607$  patients  $\times$  \$200,000 = **\$921.4 million**
- **EU5:**  $20,475 \times 30\% = 6,143$  patients  $\times$  \$150,000 = **\$921.5 million**
- **China:**  $54,600 \times 30\% = 16,380$  patients  $\times$  \$80,000 = **\$1,310.4 million**
- **Japan:**  $8,531 \times 30\% = 2,559$  patients  $\times$  \$150,000 = **\$383.9 million**
- **Total Peak Sales at 30% share: \$3,537 million (~\$3.54 billion)**

Thus, the **Potential Peak Sales** range for tarlatamab-dlle in this indication across the US, EU5, China, and Japan is approximately **\$2.36 billion to \$3.54 billion**, depending on the 20-30% treated patient share.

### **Step 4: Calculate \$ Value of 1% Share of Treated Patients**

A 1% share of treated patients corresponds to 1% of the total eligible patient population (~99,000 patients), which is 990 patients. The value is calculated as the number of patients per geography (at 1% share) multiplied by the price per patient.

- **US:**  $15,356 \times 1\% = 154$  patients  $\times$  \$200,000 = **\$30.8 million**
- **EU5:**  $20,475 \times 1\% = 205$  patients  $\times$  \$150,000 = **\$30.8 million**
- **China:**  $54,600 \times 1\% = 546$  patients  $\times$  \$80,000 = **\$43.7 million**

- **Japan:**  $8,531 \times 1\% = 85 \text{ patients} \times \$150,000 = \$12.8 \text{ million}$

- **Total \$ Value of 1% Share:** **\$118.1 million**

Thus, the **\$ value of a 1% share of treated patients** across these geographies is approximately **\$118.1 million**.

## **Key Assumptions and Caveats**

1. **Patient Population:** Incidence and progression rates are based on general epidemiology data for SCLC and ES-SCLC. Real-world data may vary by country.

2. **Pricing:** Prices are assumed based on similar therapies and adjusted for geographic differences. Actual pricing for tarlatamab-dlle may differ once publicly disclosed.

3. **Market Share:** The 20-30% range is as given, but actual adoption depends on competition (e.g., other therapies for ES-SCLC), clinical outcomes, and reimbursement.

4. **Treatment Duration:** Assumes a single course of therapy per patient annually. If treatment is ongoing, costs per patient may increase.

5. **Access:** Assumes uniform access across geographies, though barriers in China and parts of EU5 may reduce treated patient numbers.

## **Final Answer**

- **Potential Peak Sales for tarlatamab-dlle** in ES-SCLC (post-platinum progression) across the US, EU5, China, and Japan:

- At 20% treated patient share: **~\$2.36 billion**

- At 30% treated patient share: **~\$3.54 billion**

- **\$ Value of 1% Share of Treated Patients:** **~\$118.1 million**

These estimates should be validated with specific data on tarlatamab-dlle pricing, real-world patient numbers, and market dynamics as they become available. If you have access to more detailed inputs (e.g., exact pricing or patient pool data), I can refine the calculations further.