

To estimate the **Potential Peak Sales** for tremelimumab (Imjudo) in the indication of metastatic non-small cell lung cancer (NSCLC) 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 specific data such as exact patient numbers, pricing, and market penetration may not be publicly available or provided in the query, I will use reasonable assumptions based on industry standards, epidemiology data, and market dynamics for NSCLC. Here's the step-by-step methodology and estimation:

Step 1: Define the Target Patient Population

Tremelimumab is approved for metastatic NSCLC patients without EGFR mutations or ALK genomic tumor aberrations in combination with durvalumab and platinum-based chemotherapy. We need to estimate the number of eligible patients in each geography.

- **NSCLC Epidemiology:** NSCLC accounts for ~85% of lung cancer cases. Of these, ~70-80% are non-squamous, and ~70-80% of patients do not have EGFR or ALK mutations (making them eligible for this therapy). Additionally, ~30-40% of NSCLC patients are diagnosed at the metastatic stage (Stage IV).

- **Annual Incidence of Lung Cancer** (used as a proxy for new cases per year):

- **US:** ~230,000 new lung cancer cases/year (85% NSCLC = ~195,500; ~35% metastatic = ~68,400; ~75% without EGFR/ALK = ~51,300 eligible patients).

- **EU5:** ~320,000 new lung cancer cases/year (85% NSCLC = ~272,000; ~35% metastatic = ~95,200; ~75% without EGFR/ALK = ~71,400 eligible patients).

- **China:** ~820,000 new lung cancer cases/year (85% NSCLC = ~697,000; ~35% metastatic = ~244,000; ~75% without EGFR/ALK = ~183,000 eligible patients).

- **Japan:** ~125,000 new lung cancer cases/year (85% NSCLC = ~106,250; ~35% metastatic = ~37,200; ~75% without EGFR/ALK = ~27,900 eligible patients).

Total Eligible Patients (Annual Incident Cases):

- US: ~51,300

- EU5: ~71,400

- China: ~183,000

- Japan: ~27,900

- **Total:** ~333,600 patients/year

Step 2: Estimate Treated Patient Share

The query assumes a **20% to 30% share of treated patients** for tremelimumab in this indication. This accounts for competition from other immunotherapies (e.g., pembrolizumab, nivolumab) and standard-of-care treatments.

- **Low-End Share (20%):** 20% of 333,600 = ~66,720 patients treated annually.
- **High-End Share (30%):** 30% of 333,600 = ~100,080 patients treated annually.

Breakdown by Geography (using mid-point share of 25% for simplicity in calculation):

- US: 25% of 51,300 = ~12,825 patients
- EU5: 25% of 71,400 = ~17,850 patients
- China: 25% of 183,000 = ~45,750 patients
- Japan: 25% of 27,900 = ~6,975 patients

Step 3: Estimate Pricing per Patient

Tremelimumab is an immunotherapy, and pricing for such drugs is typically high, especially in the US and EU5, with lower pricing in China due to market access policies. Pricing is often based on a full treatment course (e.g., per year or per treatment cycle). For estimation:

- **US:** ~\$150,000 per patient per year (based on pricing of similar drugs like durvalumab or ipilimumab).
- **EU5:** ~\$100,000 per patient per year (discounts due to healthcare systems and negotiations).
- **Japan:** ~\$120,000 per patient per year (similar to EU5 but with slight premium).
- **China:** ~\$50,000 per patient per year (significant discounts due to national reimbursement policies and local competition).

Step 4: Calculate Potential Peak Sales

Peak sales are calculated as the number of treated patients multiplied by the price per patient. We will calculate for the 20% and 30% share scenarios using the mid-point patient share (25%) for detailed breakdown by geography.

At 25% Share:

- **US:** 12,825 patients × \$150,000 = ~\$1.92 billion
- **EU5:** 17,850 patients × \$100,000 = ~\$1.79 billion
- **China:** 45,750 patients × \$50,000 = ~\$2.29 billion
- **Japan:** 6,975 patients × \$120,000 = ~\$0.84 billion
- **Total Peak Sales at 25% Share:** ~\$6.84 billion

Range for 20% to 30% Share:

- **At 20% Share:** Total patients = 66,720; Peak Sales = ~\$5.47 billion
- **At 30% Share:** Total patients = 100,080; Peak Sales = ~\$8.21 billion

Potential Peak Sales Range: \$5.5 billion to \$8.2 billion annually across the US, EU5, China, and Japan.

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

A 1% share of treated patients corresponds to 1% of the total eligible patient population (333,600 patients) = ~3,336 patients.

Using the same pricing per geography:

- **US:** 1% of 51,300 = 513 patients × \$150,000 = ~\$77 million
- **EU5:** 1% of 71,400 = 714 patients × \$100,000 = ~\$71 million
- **China:** 1% of 183,000 = 1,830 patients × \$50,000 = ~\$92 million
- **Japan:** 1% of 27,900 = 279 patients × \$120,000 = ~\$33 million
- **Total \$ Value of 1% Share:** ~\$273 million

\$ Value of 1% Share of Treated Patients: \$273 million annually across the US, EU5, China, and Japan.

Final Answer:

1. **Potential Peak Sales for Tremelimumab** in metastatic NSCLC (20% to 30% share of treated patients):

- **Range: \$5.5 billion to \$8.2 billion** annually across the US, EU5, China, and Japan.
- Mid-point estimate (25% share): ~\$6.8 billion.

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

- **Total: \$273 million** annually across the US, EU5, China, and Japan.

Notes:

- These estimates are based on assumptions for patient numbers, pricing, and market share. Actual figures may vary depending on real-world data, competition, reimbursement policies, and AstraZeneca's market access strategy.

- Peak sales typically occur several years after launch as market penetration increases, and sales may decline post-patent expiry due to biosimilars or generics.

- If more specific data (e.g., exact patient numbers or pricing) is available, these estimates can be refined.