To estimate the **Potential Peak Sales** for elacestrant (Orserdu) in the specified indication (ER-positive, HER2-negative, ESR1-mutated advanced or metastatic breast cancer) in the US, EU5 (France, Germany, Italy, Spain, UK), China, and Japan, as well as the **$ value of a 1% share of treated patients**, we need to follow a structured approach. Since exact data on patient populations, pricing, and market penetration may not be publicly available, I will outline the methodology and make reasonable assumptions based on available data and industry standards. If you have specific data (e.g., patient numbers or pricing), I can refine the calculations.

Step 1: Define the Target Patient Population

Elacestrant is approved for postmenopausal women or adult men with **ER-positive, HER2-negative, ESR1-mutated advanced or metastatic breast cancer** who have progressed after at least one line of endocrine therapy. Key points to consider:

- **ER-positive, HER2-negative breast cancer** accounts for approximately 60-70% of all breast cancer cases.

- **ESR1 mutations** are present in about 20-40% of patients with ER-positive metastatic breast cancer who have progressed on endocrine therapy.

- **Advanced or metastatic breast cancer (Stage IV)** represents about 5-10% of breast cancer cases at diagnosis, but many early-stage patients progress to metastatic disease over time.

Estimated Eligible Patient Population

Using prevalence and incidence data for breast cancer, along with the proportion of patients fitting the indication:

- **US**: ~3.8 million breast cancer survivors; ~150,000-200,000 with metastatic breast cancer. Of these, ~60-70% are ER+/HER2- (~90,000-140,000), and ~20-40% have ESR1 mutations (~18,000-56,000).

- **EU5**: Similar proportions, with a combined breast cancer prevalence of ~2.5-3 million. Metastatic cases are ~100,000-150,000, with ~60,000-105,000 ER+/HER2-, and ~12,000-42,000 with ESR1 mutations.

- **China**: Breast cancer prevalence is lower (~2-2.5 million), with ~80,000-120,000 metastatic cases. ER+/HER2- is ~50,000-84,000, and ESR1 mutations ~10,000-33,600.

- **Japan**: Prevalence ~500,000-600,000; metastatic cases ~20,000-30,000; ER+/HER2- ~12,000-21,000; ESR1 mutations ~2,400-8,400.

Midpoint Estimates of Eligible Patients (ESR1-mutated, post-endocrine therapy):

- US: ~37,000

- EU5: ~27,000

- China: ~21,800

- Japan: ~5,400

- **Total**: ~91,200 patients

Step 2: Estimate Treated Patients (Market Penetration)

Assuming a **20-30% share of treated patients** among the eligible population (as per your query), we calculate:

- **20% Share**: 91,200 × 0.20 = ~18,240 treated patients

- **30% Share**: 91,200 × 0.30 = ~27,360 treated patients

Breakdown by Geography (Midpoint Estimates):

- **20% Share**:

- US: 37,000 × 0.20 = 7,400

- EU5: 27,000 × 0.20 = 5,400

- China: 21,800 × 0.20 = 4,360

- Japan: 5,400 × 0.20 = 1,080

- **30% Share**:

- US: 37,000 × 0.30 = 11,100

- EU5: 27,000 × 0.30 = 8,100

- China: 21,800 × 0.30 = 6,540

- Japan: 5,400 × 0.30 = 1,620

Step 3: Estimate Pricing for Elacestrant

Pricing for targeted therapies in metastatic breast cancer varies by region. Elacestrant, being a novel oral SERD (selective estrogen receptor degrader), is likely priced similarly to other drugs in this class (e.g., fulvestrant, though it's injectable, or other oral therapies like CDK4/6 inhibitors).

- **US**: Annual cost for similar therapies is ~$100,000–$150,000 per patient. Assume ~$120,000/year for elacestrant.

- **EU5**: Pricing is typically 50-70% of US prices due to healthcare system negotiations. Assume ~$60,000–$80,000/year (midpoint $70,000).

- **China**: Pricing is lower due to market access and affordability. Assume ~$30,000–$50,000/year (midpoint $40,000).

- **Japan**: Pricing is often closer to EU levels. Assume ~$60,000–$80,000/year (midpoint $70,000).

Step 4: Calculate Potential Peak Sales

Peak sales are calculated as: **Number of Treated Patients × Annual Cost per Patient**.

At 20% Market Share:

- **US**: 7,400 patients × $120,000 = **$888 million**

- **EU5**: 5,400 patients × $70,000 = **$378 million**

- **China**: 4,360 patients × $40,000 = **$174.4 million**

- **Japan**: 1,080 patients × $70,000 = **$75.6 million**

- **Total Peak Sales (20% share)**: $888M + $378M + $174.4M + $75.6M = **~$1.516 billion**

At 30% Market Share:

- **US**: 11,100 patients × $120,000 = **$1.332 billion**

- **EU5**: 8,100 patients × $70,000 = **$567 million**

- **China**: 6,540 patients × $40,000 = **$261.6 million**

- **Japan**: 1,620 patients × $70,000 = **$113.4 million**

- **Total Peak Sales (30% share)**: $1.332B + $567M + $261.6M + $113.4M = **~$2.274 billion**

Potential Peak Sales Range: **$1.516 billion (20% share) to $2.274 billion (30% share)** annually across the US, EU5, China, and Japan.

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

A 1% share of the eligible population (91,200 patients) is **912 patients**. Using the same pricing assumptions:

- **US**: (37,000 × 0.01 = 370 patients) × $120,000 = **$44.4 million**

- **EU5**: (27,000 × 0.01 = 270 patients) × $70,000 = **$18.9 million**

- **China**: (21,800 × 0.01 = 218 patients) × $40,000 = **$8.72 million**

- **Japan**: (5,400 × 0.01 = 54 patients) × $70,000 = **$3.78 million**

- **Total $ Value of 1% Share**: $44.4M + $18.9M + $8.72M + $3.78M = **~$75.8 million**

Final Answer

1. **Potential Peak Sales for Elacestrant** in the specified indication across the US, EU5, China, and Japan:

- At 20% market share: **~$1.516 billion** annually

- At 30% market share: **~$2.274 billion** annually

2. **$ Value of 1% Share of Treated Patients** across these geographies: **~$75.8 million** annually

Notes and Caveats

- These estimates are based on assumptions about patient populations, market share, and pricing. Real-world figures may vary due to competition (e.g., other SERDs or therapies), reimbursement policies, and market access challenges, especially in China.

- Peak sales typically occur 5-10 years post-launch after market penetration stabilizes, assuming no major competitors or patent cliffs.

- If you have access to more specific data (e.g., exact patient numbers from clinical studies or pricing announcements), I can refine these calculations.