

The supply of plasma-derived medicinal products in the future of Europe

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Asia PDMP Usage and Trends

Matthew Hotchko, PhD

Marketing Research Bureau, Spain

Disclosure

- Matthew Hotchko is the President and owner of the Marketing Research Bureau, an independent company supplying market data and insights about the plasma proteins industry.



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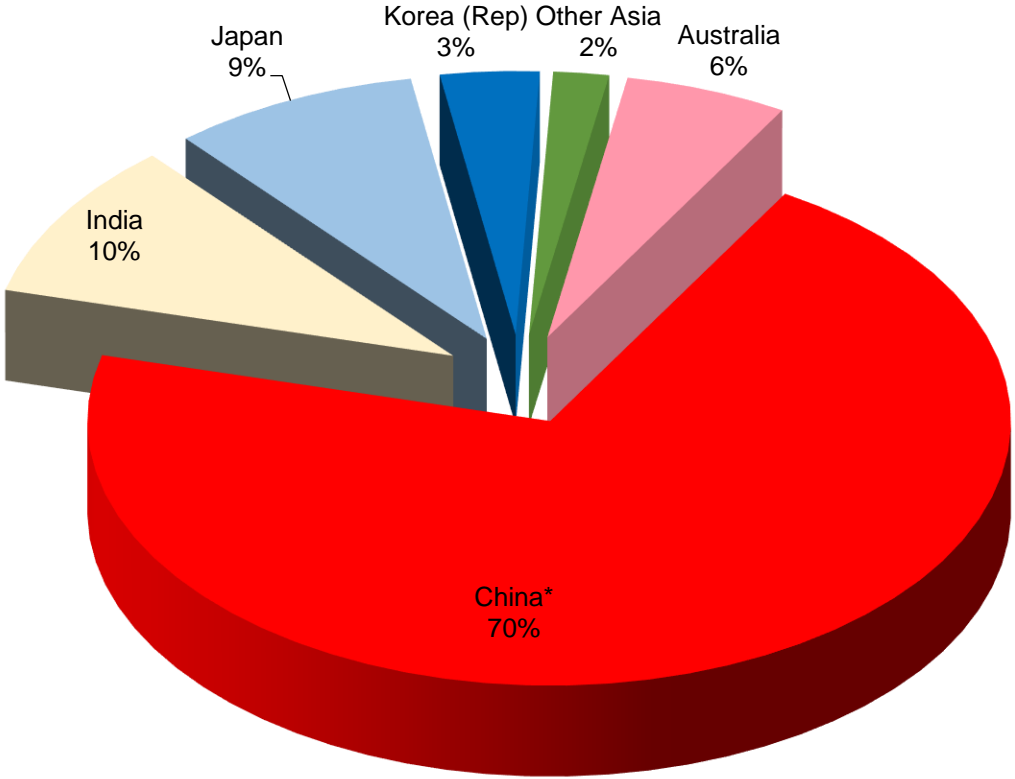
Overview

1. Plasma collections in Asia
2. Regional self-sufficiency of Asia vs. other regions
3. Asia's use of PDMPs
4. IG Usage and Trends
5. Albumin Usage and Trends



Total plasma collection Asia Pacific region 2022 was 14.5 million liters (2nd largest after US)

TOTAL PLASMA COLLECTED FOR FRACTIONATION IN ASIA PACIFIC - 2022



* Countries with commercial plasma collection

Total Market: 14.5 Million Liters



Multiple models for plasma collection in Asia (for PDMPs)



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Commercial source plasma collection only

- China

Recovered plasma only for PDMPs

- India, Malaysia, Taiwan, Thailand, Vietnam

Non-Commercial Recovered and Source Plasma

- Japan, South Korea, Singapore

Commercial and Non-Commercial Plasma

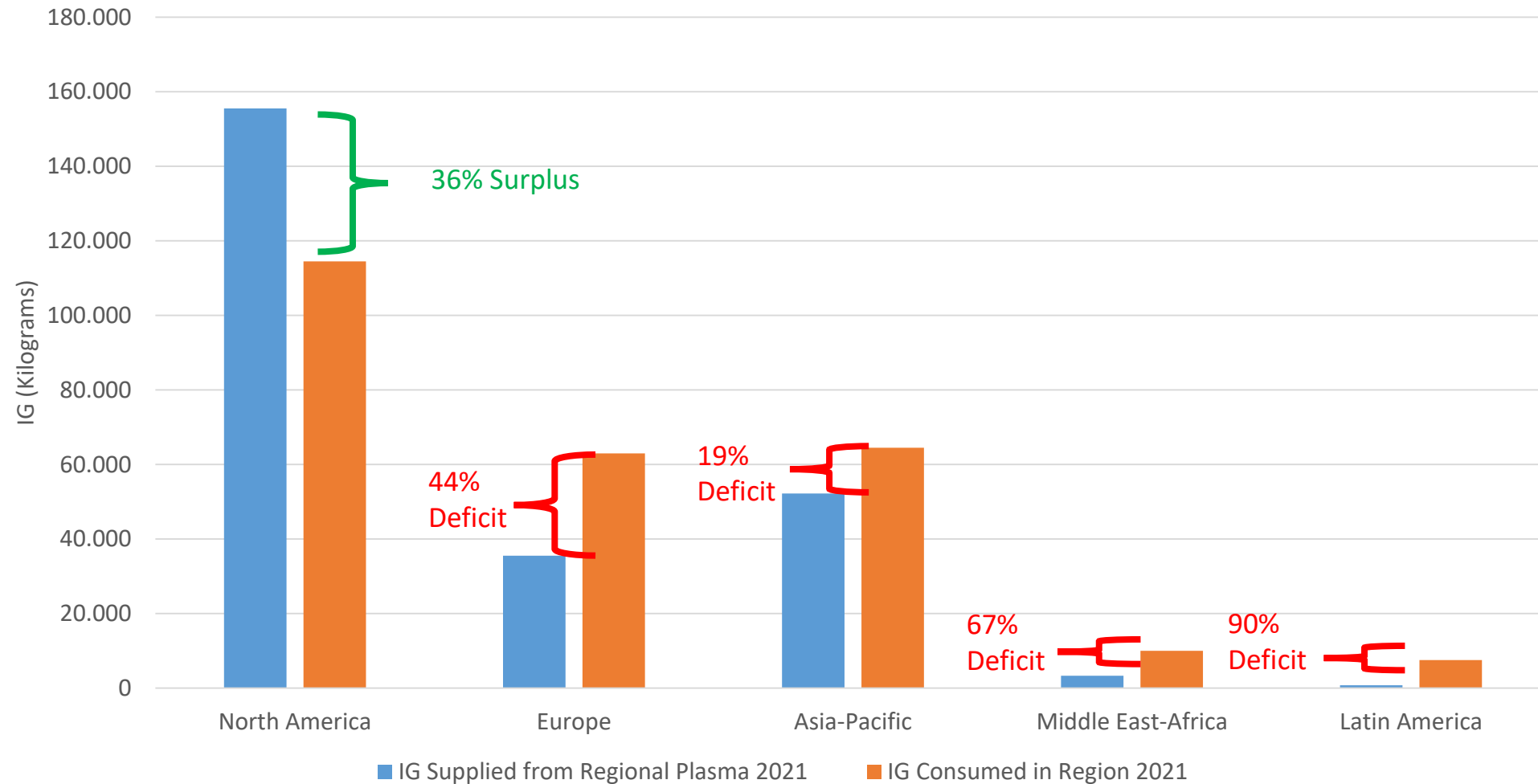
- Pakistan, Uzbekistan

Import all PDMPs today (no local plasma used)

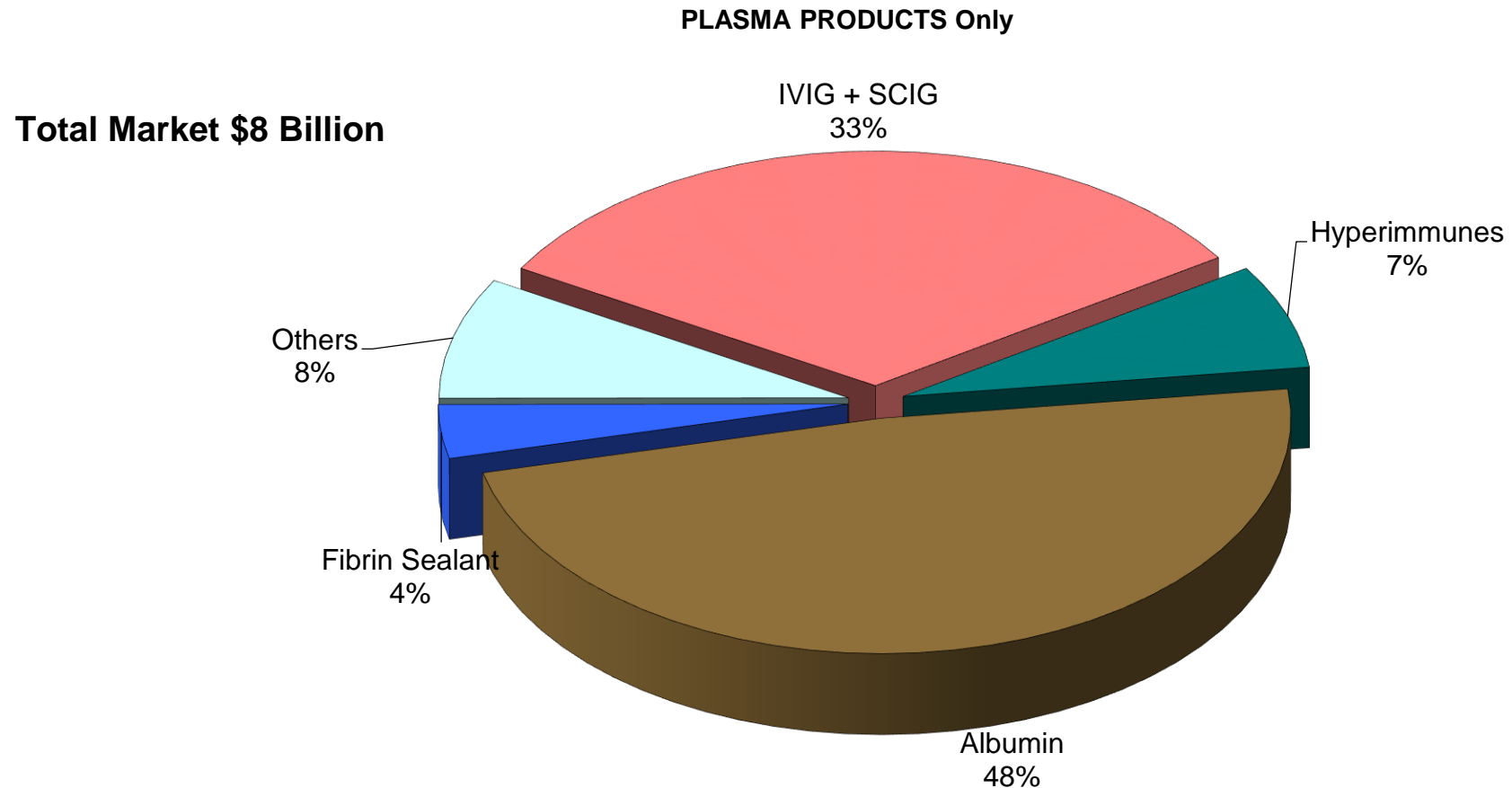
- Indonesia, Bangladesh, Cambodia, Philippines

Only North America (US) is self-sufficient in plasma on a regional basis, all other markets rely on US collected plasma to fill their deficit

Regional Plasma Supply vs. IG Needs - 2021

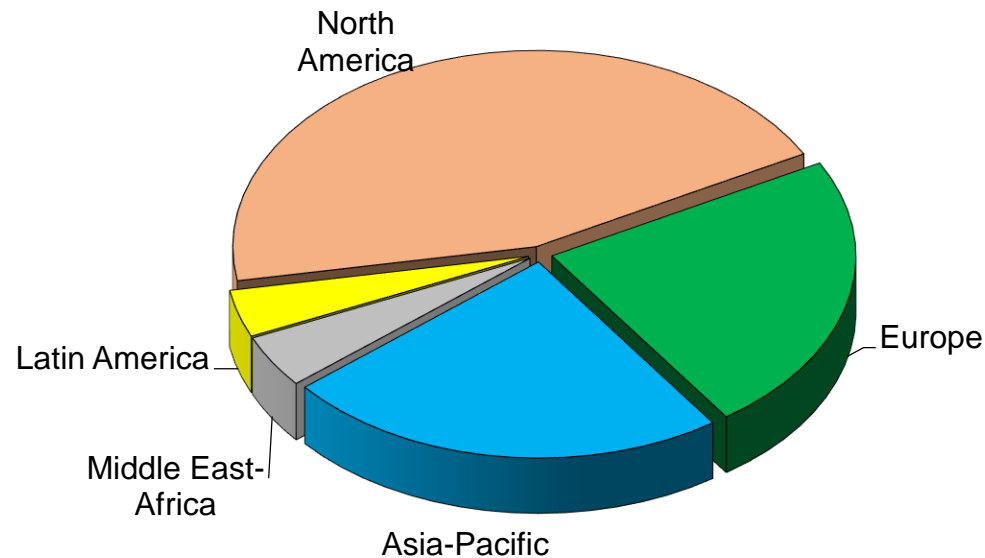


Asia and Pacific plasma proteins market by protein in 2021

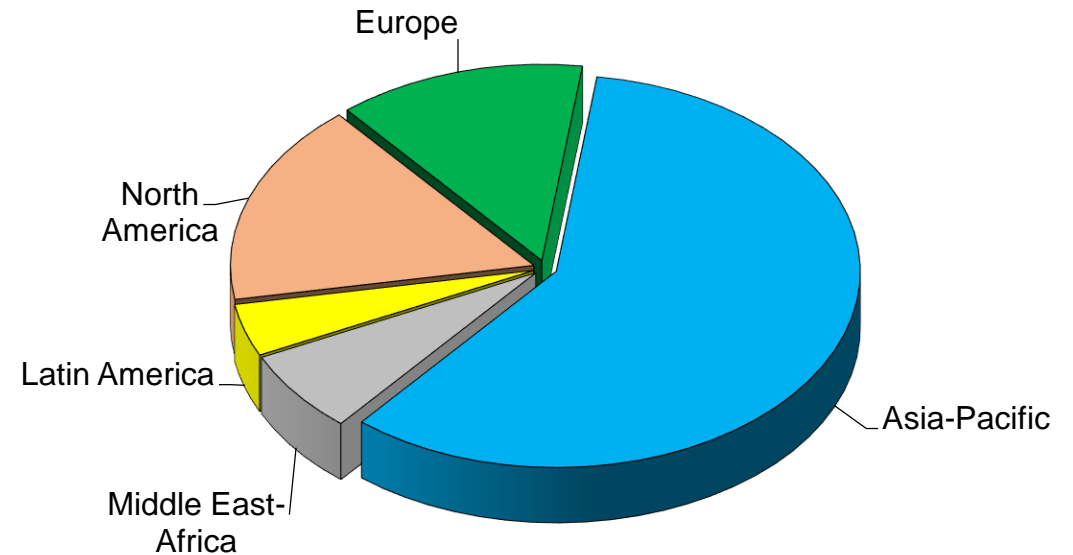


IG and Albumin Usage by Region show North America (US) and Asia (China) are complementary for the two proteins

THE IMMUNE GLOBULIN (IVIG & SCIG) MARKET IN VOLUME BY REGION - 2022
Total Market ~270 Metric Tons



THE ALBUMIN MARKET IN VOLUME BY REGION - 2022
Total Market ~1,400 Metric Tons

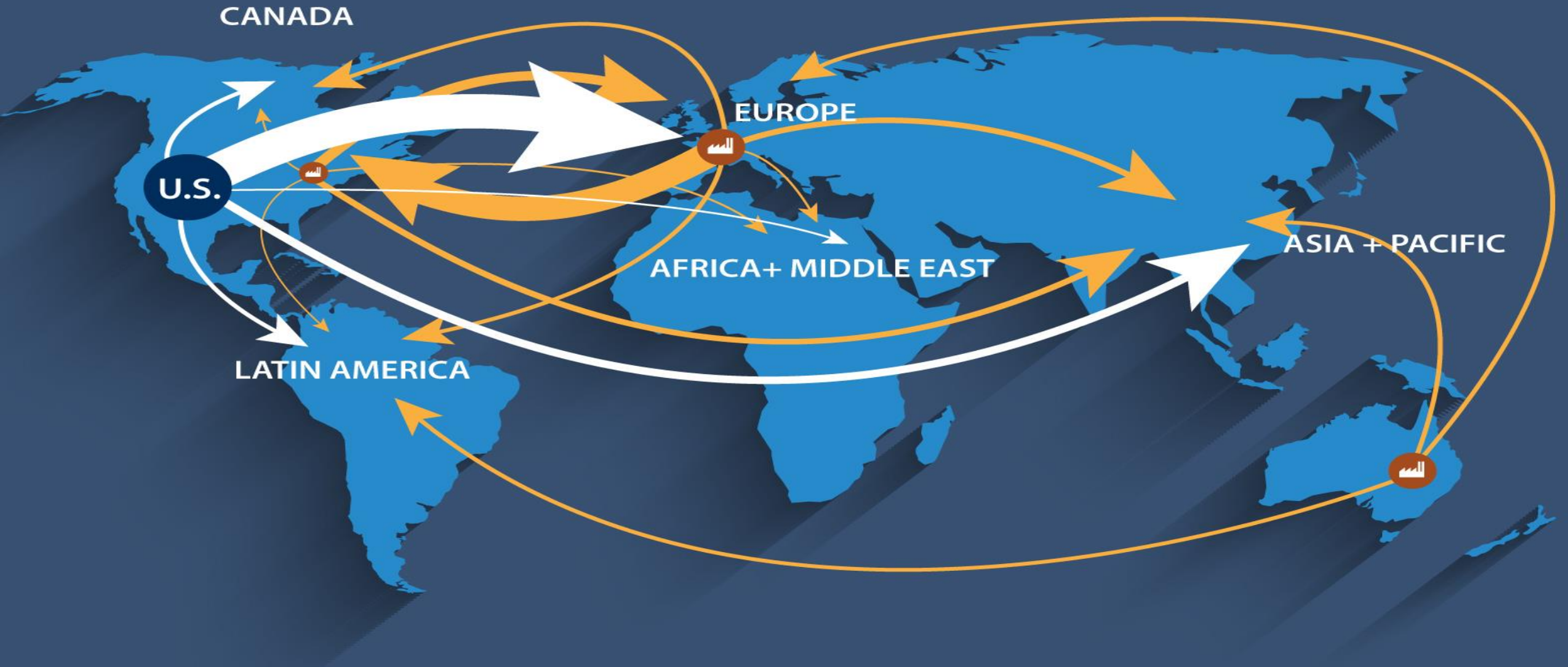


IG goes to North America (and Europe), while albumin goes to Asia (mostly China)

PLASMA TRANSFERS FROM THE U.S. TO OTHER COUNTRIES

2022

INTERNATIONAL PRODUCT TRANSFERS



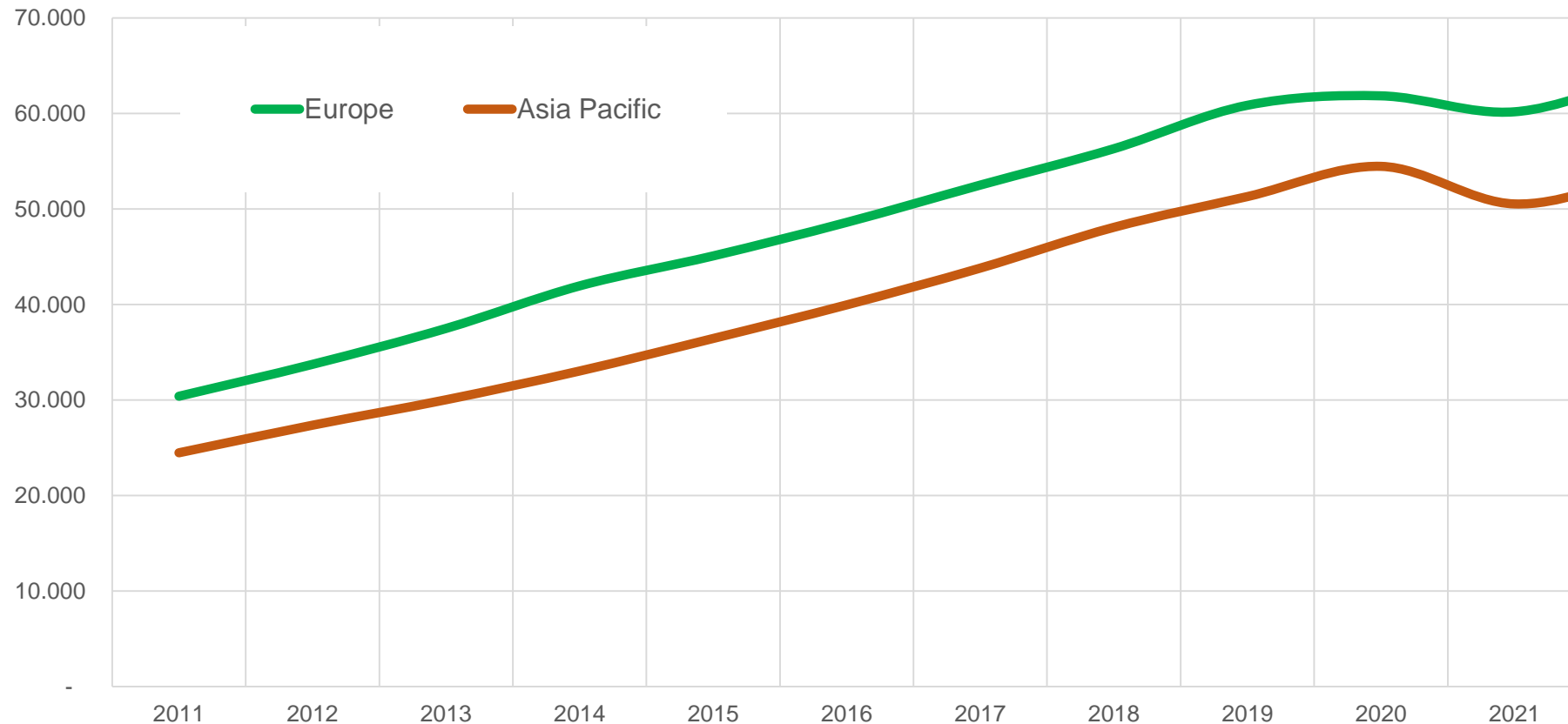
GLOBAL PLASMA FRACTIONATED — 70 MILLION LITERS

GLOBAL MARKET VALUE — \$30 BILLION



IG usage has grown in Asia & Europe in the past 10 years (Covid caused a temporary dip)

IMMUNOGLOBULIN CONSUMPTION BY REGION BETWEEN 2011 AND 2021
(Kilograms)



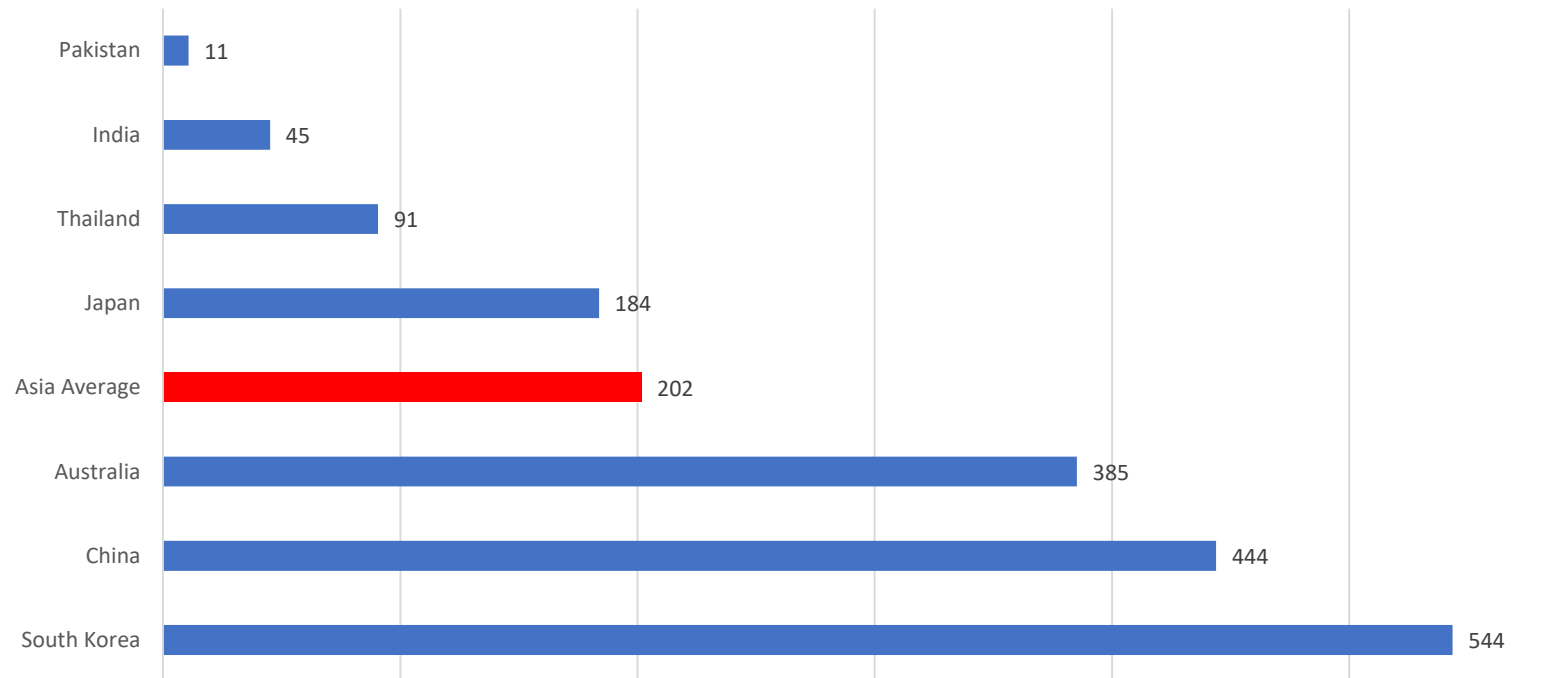
Asia Summary of IG Usage and Trends

- IG growth has been consistent the past 10+ years, driven by more supply of IVIG in China (mandated self-sufficiency) and growth in immunodeficiencies (PID) and neurology (GBS/Covid)
- Future IG growth is driven by various trends, including:
 - Immunodeficiencies including secondary immunodeficiencies,
 - Aging of population,
 - Higher dosing,
 - Neurological use,
 - Globalization
 - Emerging viruses
- In Asia & Pacific, only supply is a real risk to growth of IG usage in the next 6+ years
 - Asian market is likely to grow faster than the European market through 2030



Albumin usage per capita Asia Pacific Region 2021 – wide disparity

Albumin Average Consumption by Country 2021
Kilograms per Million Population



Low per capita usage countries always indicate high unmet need among patients



What is driving albumin growth in China and Asia?

Positive Factors

- Population (including elderly) is increasing
- Obesity likely to increase – more cardiac issues, more liver diseases, NASH
- More age-related surgeries (CBP) and more cancers will lead to more albumin use in the region

Negative Factors

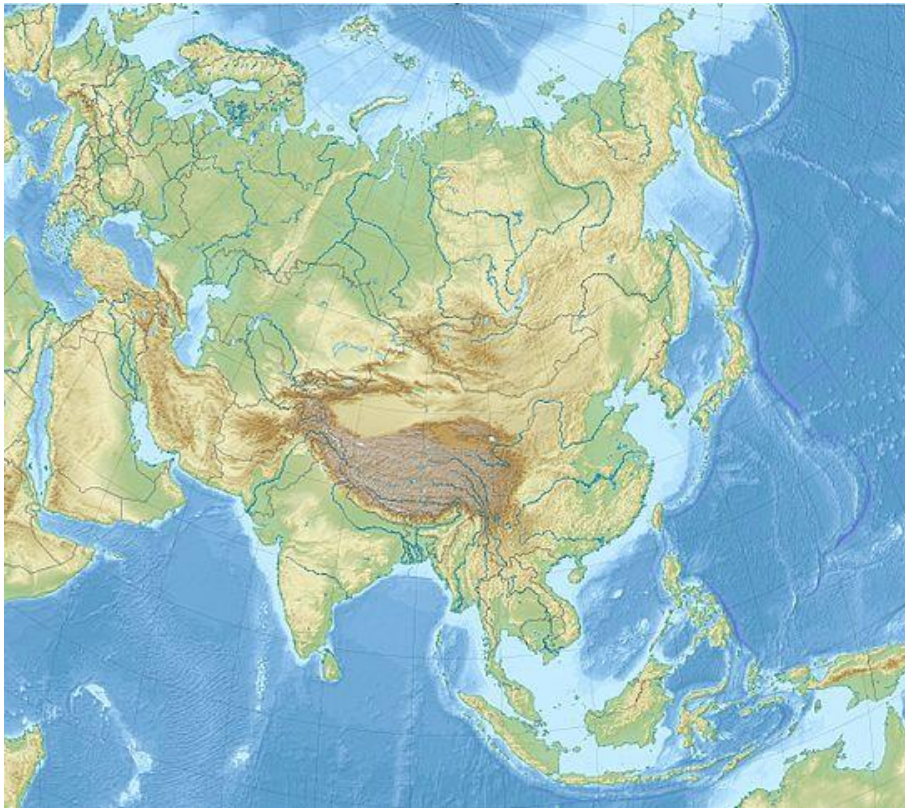
- Hepatitis B & C – less younger patients due to immunization and cures
- Less invasive surgeries leading to less blood loss situations

Key Questions

- China – How long can it continue to grow in demand?
- Will albumin demand keep up with plasma fractionation growth?



Looking forward in Asia



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Asia is a mix of aging- and population-declining countries with middle-high income (Japan, South Korea, China, Taiwan) and more emerging economies where the population is younger and growing (India, SE Asia, South Asia)

- These two different groups will have different trajectories regarding plasma proteins needs, with likely most of the IG going to the higher income countries (including China) and the albumin going to China but also others when China's demand is met.

Higher global collections in 2022 and 2023 should lead to higher supply of Immunoglobulins and albumin in the future.

More countries in Asia are beginning to use recovered plasma for fractionation and even begin plasmapheresis (commercial or non-commercial)

- This will lead to more local supply at possibly lower prices which can be used to treat more patients

Thank you

