GlobalData

PharmaPoint

**AVASTIN (COLORECTAL CANCER) –
FORECAST AND MARKET ANALYSIS TO 2023**

Executive Summary

Table below presents the key metrics for Avastin for colorectal cancer (CRC) in the eight major pharmaceutical markets (8MM) (US, France, Germany, Italy, Spain, UK, Japan, and China) during the forecast period from 2013–2023.

Avastin: Key Metrics in the 7MM and China for Colorectal Cancer Markets, 2013-2023	
2013 Market Sales	
US	$1,302.9m
5EU	$870.6m
Japan	$371.4m
China	$191.8m
Total	**$2,736.6m**
Key events (2013-2023)	**Level of Impact**
Label-extension of Avastin (bevacizumab) in the pre-treated second-line metastatic setting following first line Avastin treatment in 2013	↑↑↑
Avastin patent expiration in all markets in 2019	↓↓↓
2023 Market Sales	
US	$1,185.3m
5EU	$820.5m
Japan	$330.5m
China	$404.7m
Total	**$2,741.0m**
Source: GlobalData 7MM= US, France, Germany, Italy, Spain, UK and Japan 5EU = France, Germany, Italy, Spain, and the UK	

Sales for Avastin in the Colorectal Cancer Market

GlobalData estimates that sales of Avastin for CRC markets were $2,736.6 million in 2013. By 2023, the end of the forecast period, GlobalData projects Avastin sales at $2,741.0 million in the 8MM remaining almost same, at a Compound Annual Growth Rate (CAGR) of 0.0%.

Major drivers to the growth of Avastin in the CRC market over the forecast period include:
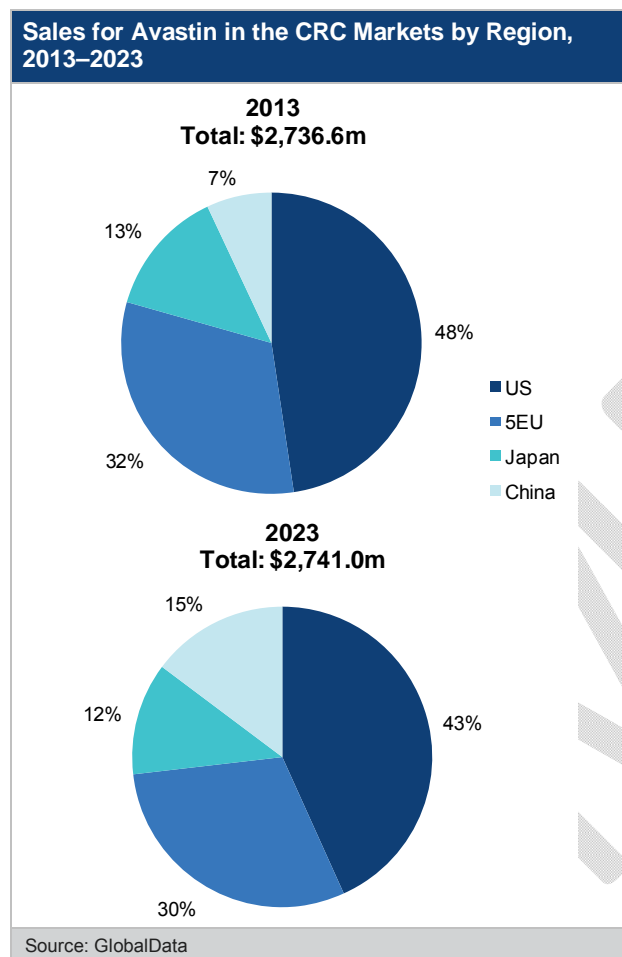
- One of the most widely prescribed brands in oncology; first in class anti-angiogenic agent

- First targeted treatment to be approved for CRC

- Approved for use across the lucrative first and second-line settings, and for patients pre-treated with Avastin in a previous line

- Roche's marketing experience in oncology

Major barriers to the growth of Avastin in the CRC market will include:

- A benefit/risk ratio not fully satisfactory, since only a subset of patients (which remains difficult to identify) really benefits from Avastin

- A significant treatment cost under pressure by growing healthcare system financial constraint

- Necessary to administer with chemotherapy

- Limited use after surgery due to relative bleeding risks; not approved for use in the adjuvant setting

Executive Summary

The following figure illustrates the global sales for Avastin in the CRC markets by region during the forecast period.

Sales for Avastin in the CRC Markets by Region, 2013–2023

**2013
Total: $2,736.6m**

- 7%
- 13%
- 48%
- 32%

Legend:
- US
- 5EU
- Japan
- China

**2023
Total: $2,741.0m**

- 15%
- 12%
- 43%
- 30%

Source: GlobalData

What Do the Physicians Think?

Key Opinion Leaders (KOLs) do not expect results from the FIRE-3 study comparing Erbitux and Avastin in the first-line KRAS wild-type metastatic setting to have a major impact on prescribing behavior.

"I am not sure [the results from the FIRE-3 study] are going to make a huge difference. I think, in practice at least, in the US, for patients who are KRAS wild-type, the choice of Erbitux vs. Avastin has really been something that the physician has chosen on their own. I think there are some physicians who really like to use Erbitux, and use it up front, and other people who always prescribed Avastin and either don't use Erbitux at all or really use it more at a later stage."

US Key Opinion Leader

"Avastin is the standard of care for both KRAS wild-type and KRAS mutated patients. This is the perception right now for the US as a whole. There are pockets, perhaps, where people probably are moving to Erbitux plus FOLFIRI, but I would say majority is still Avastin frontline."

US Key Opinion Leader

"The reason for using Avastin as a first-line treatment is due to the side-effect profile compared to Erbitux, rather than the efficacy. The side effect of most concern with Erbitux is the rash."

US Key Opinion Leader

Executive Summary

Interviewed KOLs expect Zaltrap and Cyramza (ramucirumab) to struggle to garner much uptake in the second-line metastatic setting.

"In second-line [setting] you have Avastin, Zaltrap, and now, [potentially,] ramucirumab. For ramucirumab, to be honest, I think it will come down to what the survival data looks like. If it's only as good as or worse than the other two, then, being the third player to join the party, I don't think it has much chance of becoming a standard of care…"

OUS Key Opinion Leader

"In my view there is no probable advantage [of Zaltrap] over Avastin continuation, and [in my experience] there seems to be more side effects with Zaltrap than Avastin; so I really don't prefer to use Zaltrap at this time."

US Key Opinion Leader

Interviewed experts reported high unmet need for targeted treatments for KRAS and BRAF mutation-positive CRC patients.

"Unmet needs in overall survival are greater for KRAS mutated patients. We need to have new drugs to try to increase overall survival in this population. [Overall], I think now we need to have a different strategy for KRAS and for BRAF patients. It's important to have different strategy."

OUS Key Opinion Leader

"BRAF mutant-positive colorectal cancer patients are a subset with very poor prognosis; most

patients really have a very rapid and progressive course and it is a pretty nasty disease. But, I think his is probably the area where in the area of targeted therapies we may see perhaps the most exciting developments in the next few years for colorectal cancer"

US Key Opinion Leader

Interviewed KOLs are excited about the potential of kinase inhibitor combinations, such as BRAF/MEK with EGFR inhibitors for BRAF mutation-positive disease, and the immune checkpoint inhibitors, such as the anti-PD1/PDL1 antibodies.

"The high level question is the comparison between the doublet BRAF/EGFR combinations to some of the potential triplet BRAF/MEK/EGFR or BRAF/PI3K/EGFR combinations. If they are tolerable, I really think that those triplets are going to be the better way to go. I am hopeful we could see some, potentially, really exciting advances in the 'oncogene-addiction' treatment category."

US Key Opinion Leader

"The PD1 and PDL1 inhibitors are exciting, and so far, in CRC, they have only been tested in a very small number of patients. But I think there is enough there to warrant the [further] exploration of this space in colorectal cancer. It remains to be seen what happens, but I know there is a lot of excitement about that."

US Key Opinion Leader

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Colorectal cancer (CRC) is the second leading cause of mortality among cancer patients in the world and is the third most diagnosed cancer globally, and thus represents a huge burden on healthcare systems. Despite robust screening programs across most of the 8MM (US, France, Germany, Italy, Spain, UK, Japan, and China), a significant proportion (10-20%) of patients are diagnosed with stage IV metastatic disease and correspondingly poor prognoses, compared to resectable early-stage disease. In terms of targeted treatments, the metastatic CRC treatment landscape is mature, including the branded treatments Avastin (bevacizumab), Erbitux (cetuximab), and Vectibix (panitumumab), treatments that have extended the survival of metastatic patients compared to chemotherapy-only regimens. However, high unmet needs remain for the extension of survival of metastatic patients, and particularly those with KRAS mutation-positive disease, for whom the epidermal growth factor receptor (EGFR) inhibitors Erbitux and Vectibix are not recommended.

The CRC market is expected to grow due to the incorporation of five late-stage pipeline agents during the forecast period, including Mologen's MGN1703, Eli Lilly's Cyramza (ramucirumab), and Boehringer Ingelheim's nintedanib. These pipeline agents will be utilized across different segments of the metastatic population, from the first-line maintenance setting (MGN1703) to the second- and later-line settings (Cyramza and nintedanib). Furthermore, GlobalData expects the label extension of Stivarga as a first-line adjuvant treatment for metastatic CRC patients with resected liver metastases. Stivarga is currently approved for the smaller third- or fourth-line, chemotherapy, and targeted-treatment refractive settings. Ultimately, however, GlobalData expects unmet needs to remain unfulfilled by these pipeline agents, and anticipates that novel, innovative approaches, such as those targeting BRAF mutation-positive disease and immune checkpoint inhibitors, will provide the best opportunity for substantial improvement in the prognosis of advanced CRC patients.

Introduction

2.2   Related Reports

- GlobalData (2014). HER2-Positive Breast Cancer – Global Drug Forecast and Market Analysis to 2023, September 2014, GDHC86PIDR

- GlobalData (2014). Non-Hodgkin's B-Cell Lymphoma – Opportunity Analysis and Forecast to 2018, August 2014, GDHC035POA

- GlobalData (2014). Chronic Lymphocytic Leukemia (CLL) – Opportunity Analysis and Forecasts to 2018, June 2014, GDHC017POA

- GlobalData (2014). Non-Small Cell Lung Cancer (NSCLC) – Global Drug Forecast and Market Analysis to 2022 – Event-Driven Update, April 2014, GDHC002EPIDR

- GlobalData (2014). Pancreatic Cancer – Opportunity Analysis and Forecasts to 2017, March 2014, GDHC016POA

- GlobalData (2013). Bladder Cancer – Opportunity Analysis and Forecasts to 2017, December 2013, GDHC014POA

- GlobalData (2014). Colorectal Cancer – Global Drug Forecast and Market Analysis to 2023, November 2014, GDHC95PIDR

- GlobalData (2014). Colorectal Cancer – US Drug Forecast and Market Analysis to 2023, November 2014, GDHC257CFR

- GlobalData (2014). Colorectal Cancer – 5EU Drug Forecast and Market Analysis to 2023, November 2014, GDHC258CFR

- GlobalData (2014). Colorectal Cancer – Japan Drug Forecast and Market Analysis to 2023, November 2014, GDHC259CFR

- GlobalData (2014). Colorectal Cancer – China Drug Forecast and Market Analysis to 2023, November 2014, GDHC260CFR

- GlobalData. Erbitux (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC470DFR

- GlobalData. Vectibix (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC471DFR

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- GlobalData. Stivarga (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC472DFR

- GlobalData. Zaltrap (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC473DFR

- GlobalData. TS-1 (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC474DFR

- GlobalData. Lonsurf (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC475DFR

- GlobalData. Cyramza (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC476DFR

- GlobalData. Imprime PGG (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC477DFR

- GlobalData. MGN1703 (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC478DFR

- GlobalData. Nintedanib (Colorectal Cancer) – Forecast and Market Analysis to 2023, November 2014, GDHC479DFR

- GlobalData. Colorectal Cancer – Current and Future Players, November 2014, GDHC1039FPR

2.3   Upcoming Related Reports

- GlobalData (2014). HER2-Negative Breast Cancer – Global Drug Forecast and Market Analysis to 2023

- GlobalData (2014). Malignant Melanoma – Global Drug Forecast and Market Analysis to 2023

Appendix

7.8   About GlobalData

GlobalData is a leading global provider of business intelligence in the Healthcare industry. GlobalData provides its clients with up-to-date information and analysis on the latest developments in drug research, disease analysis, and clinical research and development. Our integrated business intelligence solutions include a range of interactive online databases, analytical tools, reports and forecasts. Our analysis is supported by a 24/7 client support and analyst team.

GlobalData has offices in New York, Boston, London, India and Singapore.

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