Brand Name: Avastin
Generic: bevacizumab
Type: monoclonal antibody
Year Accepted/Phase:

- Colon cancer: 2004
- Lung cancer: 2006
- Metastatic breast cancer: 2008
- Kidney and brain (glioblastoma) cancer: 2009

Mechanism:

Avastin works by targeting and inhibiting VEGF. VEGF is essential for angiogenesis and by inhibiting it, Avastin can reduce the blood supply to tumors, limiting their growth and spread.

Chemical Structure: N/A

Indication:

Metastatic Colorectal Cancer
Usage: Avastin is used in combination with chemotherapy for the treatment of metastatic colorectal cancer.

Non-Small Cell Lung Cancer (NSCLC)
Usage: Avastin is used in combination with carboplatin and paclitaxel for the first-line treatment of unresectable, locally advanced, recurrent, or metastatic non-squamous NSCLC.

Glioblastoma
Usage: Avastin is used as a single agent for the treatment of glioblastoma with progressive disease following prior therapy.

Metastatic Renal Cell Carcinoma
Usage: Avastin is used in combination with interferon alfa for the treatment of metastatic renal cell carcinoma.

Cervical Cancer
Usage: Avastin is used in combination with paclitaxel and cisplatin or paclitaxel and topotecan for the treatment of persistent, recurrent, or metastatic cervical cancer.

Ovarian Cancer
Platinum-Resistant Recurrent Ovarian Cancer:
Usage: Avastin is used in combination with chemotherapy for the treatment of patients with platinum-resistant, recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer.

Platinum-Sensitive Recurrent Ovarian Cancer:
Usage: Avastin is used in combination with carboplatin and paclitaxel or carboplatin and gemcitabine, followed by Avastin as a single agent, for the treatment of patients with platinum-sensitive recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer.

Hepatocellular Carcinoma (HCC)
Usage: Avastin is used in combination with atezolizumab for the treatment of patients with unresectable or metastatic HCC who have not received prior systemic therapy.

Clinical trials:

AVF2107g Trial (Phase III)
Pubmed: https://pubmed.ncbi.nlm.nih.gov/15175435/
Purpose: Assess the efficacy of bevacizumab in combination with irinotecan, fluorouracil, and leucovorin (IFL) compared to IFL alone in patients with metastatic colorectal cancer.
Date: Results published in 2004.
Results: Combination of bevacizumab with IFL significantly improved overall survival, progression-free survival, and response rates compared to IFL alone. This led to the FDA approval of bevacizumab for metastatic colorectal cancer in February 2004.

E2100 Trial (Phase III)
Pubmed: https://pubmed.ncbi.nlm.nih.gov/18160686/
Purpose: Evaluate the efficacy of adding bevacizumab to paclitaxel compared to paclitaxel alone in patients with metastatic breast cancer.
Date: Results published in 2007.
Results: Addition of bevacizumab to paclitaxel significantly improved progression-free survival (PFS) but did not significantly improve overall survival (OS).

OCEANS Trial (Phase III)
Pubmed: https://pubmed.ncbi.nlm.nih.gov/22529265/
Purpose: Evaluate the efficacy of bevacizumab in combination with gemcitabine and carboplatin in patients with platinum-sensitive recurrent ovarian cancer.
Date: Results published in 2012.
Results: Addition of bevacizumab to chemotherapy significantly improved progression-free survival compared to chemotherapy alone, supporting the use of bevacizumab in ovarian cancer treatment.

AVAglio Trial (Phase III)
Pubmed: https://pubmed.ncbi.nlm.nih.gov/24552318/
Purpose: Investigate the efficacy of adding bevacizumab to the standard treatment of radiation therapy and temozolomide in patients with newly diagnosed glioblastoma.
Date: Results published in 2014.
Results: Addition of bevacizumab improved progression-free survival but did not significantly improve overall survival. The trial showed a benefit in delaying disease progression and reducing the need for steroids.

AURELIA Trial (Phase III)
Pubmed: https://pubmed.ncbi.nlm.nih.gov/24637997/
Purpose: Assess the efficacy of adding bevacizumab to single-agent chemotherapy in patients with platinum-resistant recurrent ovarian cancer.
Date: Results published in 2014.
Results: Combination of bevacizumab with chemotherapy significantly improved progression-free survival and response rates compared to chemotherapy alone.