ADUCANUMAB (Aduhelm) Fact Sheet

Bottom Line:
Aducanumab is an antibody that attacks and dissolves the amyloid protein that is thought to contribute to Alzheimer's dementia. It is the first new drug approved for Alzheimer's since 2003. Unfortunately, it is marginally effective at best, requires monthly IV infusion, has cumbersome monitoring requirements, and carries potentially significant side effects, all at very high cost. Until we learn more about its efficacy and side effects, we don't recommend it.

FDA Indications:
Mild Alzheimer's dementia.

Dosage Forms:
Injection: 170 mg/1.7 mL, 300 mg/3 mL.

Dosage Guidance:
Start 1 mg/kg IV infused over one hour Q4 weeks for the first two infusions; ↑ to 3 mg/kg IV Q4 weeks for the next two infusions; ↑ to 6 mg/kg IV Q4 weeks for infusions five and six; ↑ and continue recommended dose of 10 mg/kg IV Q4 weeks for infusion seven and beyond.

Monitoring: Baseline brain magnetic resonance imaging (MRI); repeat MRI prior to the seventh and 12th infusions. If there are 10 or more incident microhemorrhages or more than two focal areas of superficial siderosis, continue with caution only if follow-up MRI shows stabilization.

Cost: $$$$$

Side Effects:
- Most common: Amyloid-related imaging abnormalities (ARIAs) in 41% of patients, including edema, headache, microhemorrhage, superficial siderosis; confusion; dizziness; nausea; falls.
- Serious but rare: Angioedema, urticarial; discontinue if hypersensitivity reaction occurs.

Mechanism, Pharmacokinetics, and Drug Interactions:
- Recombinant human immunoglobulin gamma-1 (IgG1) anti-amyloid beta monoclonal antibody.
- Degraded into small peptides and amino acids through catabolic pathways, similar to endogenous IgG; t ½: 25 days.
- No drug interactions known.

Clinical Pearls:
- Aducanumab was granted accelerated approval based on reduction in amyloid beta plaques; continued approval may be contingent on verification of clinical benefit in further studies.
- Aducanumab, if used, should only be used in patients with mild cognitive impairment. There are no data on its effects in earlier or later stages.
- ARIAs are very common. Associated clinical symptoms, most commonly headache, confusion, dizziness, visual disturbance, and nausea, were present in 24% of patients treated with aducanumab.

Fun Fact:
Allegations about improper collaboration between the FDA and aducanumab's manufacturer Biogen have led to calls for an investigation by the inspector general. A number of health systems have publicly stated they will not use the drug until more convincing data are available.