

Ahmed Versus Baerveldt Study (AVB) - 2016



Objective

To compare the 5-year outcomes of Ahmed FP7 Glaucoma Valve and the Baerveldt 350 Glaucoma Implant for treatment of glaucoma.

Methods

Design: Multicenter RCT

Sample Size: 238 (161 finished 5-year follow up)

Treatment Groups:

- 124 patients to Ahmed
- 114 patients to Baerveldt

Outcome Measures:

- Treatment failure, defined as:
1) IOP out of target range, 2) additional surgery required, 3) Removal of the implant, and 4) Severe vision loss related to surgery

Results

Point 1: Ahmed had a higher rate of treatment failure than Baerveldt

- Cumulative probability of failure during 5-year follow-up was 53.2% in the Ahmed group vs. 40.0% in the Baerveldt group ($P = 0.037$)
- Most of the failure in both groups was due to high IOP (89% of Ahmed failures and 65% of Baerveldt failures)
- Both groups led to significant IOP reduction: Ahmed group decreased from 31.1 to 16.6 mmHg; Baerveldt group decreased from 31.9 to 13.6 mmHg at 5 years
- Ahmed had a higher IOP reduction in the early post-operative period and Baerveldt had a higher IOP reduction after 1 year
- Ahmed group patients had higher residual number of IOP lowering drops (1.8 versus 1.2 in Baerveldt, $P < 0.001$)

Point 2: Complication rates were mostly similar between groups

- Overall rates were 63% in Ahmed group, 69% in Baerveldt group ($P = 0.30$)
- Bleb encapsulation rates were higher in Ahmed (11% vs. 4%, $P = 0.023$)
- Refractory hypotony (requiring surgery) occurred in 1 Ahmed patient and 6 Baerveldt patients ($P = 0.057$)
- Early postoperative IOP spikes requiring paracentesis were more common in the Baerveldt group (14% vs. 4%, $P = 0.007$)

TLDR: The AVB study primarily confirmed findings from the ABC study highlighting slightly greater IOP reduction and treatment success with Baerveldt implants.