

# THE ARUBA TRIAL

## A Randomised Trial of Unruptured Brain Arteriovenous Malformations

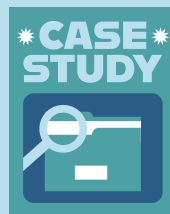
### WHAT IS AN ARTERIOVENOUS MALFORMATION?

An arteriovenous malformation (AVM) is a tangled network of blood vessels that **disrupts the usual flow of blood and oxygen** in the brain. It creates **abnormal connections** between arteries and veins, causing a disturbance in the natural circulation process.



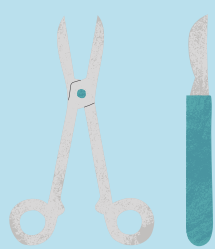
### THE ARUBA TRIAL

The ARUBA Trial was conducted to determine the risk of **death and stroke** in patients with Brain AVMs. The study assessed whether **medical management** (non-invasive treatment and medicine) is **superior to interventional therapy** (surgery or embolization) in regard to treatment outcomes.



### METHODS

AVM patients age  $\geq 18$  years from 39 clinical sites across numerous countries were enrolled in this trial. 223 patients had been enrolled in the trial, with a mean follow-up of about 33.3 months. Through a process of **randomization**, participants were assigned to either the medical management group or the interventional therapy group. The medical management group received **conservative care** and AVM monitoring. The intervention group underwent **invasive treatments** (surgery or embolization) to eliminate or reduce the AVM.



### RESULTS

The trial began in 2007 and was stopped in early 2013 due to **preliminary findings**. Data was collected from each participant. The findings suggested that **medical management alone is superior to interventional therapy treatment**, as the risk of stroke, death, and neurological disability was more than **3 times higher** for participants who underwent interventional therapy. The trial's results have **major implications** for patient care, treatment decision-making, and the future and advancement of knowledge in AVM research.

### THE FUTURE OF AVM RESEARCH

The results of the ARUBA Trial left many unanswered questions. While the trial showed that medical management is safer in terms of preventing stroke and death, it did not explain **which patients might still benefit from interventional therapies**. Further research is necessary to identify specific patient characteristics, AVM characteristics, and risk factors that could help guide the **treatment decision approach**. The trial failed to address the use of **combination therapies**, where medical management is paired with less invasive interventions. Since medical management is emphasized as a safer treatment approach, further research can **refine treatment protocols, formulate new medications, and help understand how to effectively manage AVM-related symptoms** without resorting to invasive interventions. Fundamentally, the trial's outcomes have set the stage for a new era of AVM research, ultimately leading to improved outcomes for patients with unruptured AVMs.



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#### References:

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