Culotte versus T-stenting for treatment of coronary bifurcation lesions


University Heart Center Freiburg · Bad Krozingen / Germany
Declaration of Interest

- Others (Speaker honoraria: Abbott vascular
  - Medtronik
  - Biotronik
  - Biosensors
  - Boston scientific)
Background

• In coronary bifurcation lesions side branch stenting is needed in 5 - 36 % to achieve an optimal result.

• Frequently used techniques for side branch stenting are T-and-protrusion (TAP) stenting and culotte stenting.

• There are no randomized trials comparing both techniques.
Study flow of BBK II

Randomization, N = 300

Culotte stenting, n = 150
  All received allocated intervention
  Clinical follow-up: n=150
  Lost to angiographic follow-up: n=11

TAP stenting, n = 150
  1 patient only main branch stent
  1 patient cross-over to culotte
  Angiographic follow-up: n=135
  Clinical follow-up: n=150

Angiographic follow-up: n=139
Lost to angiographic follow-up: n=15
Primary endpoint: Maximal percent diameter stenosis

Mean $\pm$ SD:

- Culotte stenting: 21 $\pm$ 20\% vs. 27 $\pm$ 25\%
- TAP stenting: $P = 0.038$ adjusted $P = 0.017$
Binary in-stent restenosis

Restenosis (%)

- **Any branch ≥ 50 %**:
  - Culotte: 6.5%
  - TAP: 17.0%
  - P = 0.006

- **Side branch ≥ 50 %**:
  - Culotte: 6.5%
  - TAP: 16.5%
  - P = 0.029

- **Main branch ≥ 50 %**:
  - Culotte: 1.4%
  - TAP: 4.4%
  - P = 0.434
TLR of the bifurcation lesion at 1 year

- Any branch: P = 0.069
- Side branch: P = 0.16
- Main branch: P = 0.25

**Graph:**
- Any branch: Culotte - 6.0%, TAP - 12.0% (P = 0.069)
- Side branch: Culotte - 4.7%, TAP - 8.7% (P = 0.16)
- Main branch: Culotte - 1.3%, TAP - 3.3% (P = 0.25)
Conclusions

• Compared with TAP stenting, culotte stenting was associated with a significantly lower incidence of angiographic restenosis.

• There was a consistent trend towards fewer target lesion re-interventions after culotte stenting as compared with TAP stenting.

• The observed differences between the two stenting techniques were driven by differences in the side-branch result.