

Publication Brief

Twenty-year experience with off-pump coronary artery bypass grafting and early postoperative angiography.

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PURPOSE

To report performance of off-pump coronary artery bypass grafting (off-pump CABG; OPCAB) combined with early postoperative angiography to assess anastomosis accuracy in surgical revascularization patients.

METHODS

- 3083 patients underwent isolated CABG between 1998 and 2017;
- 2919 patients (94.7%) underwent OPCAB;
- Distal anastomoses conduits were: left internal thoracic artery (left ITA; n=2764), right ITA (n=866) right gastroepiploic artery (n=997), radial artery (n=16), and saphenous vein (n=1505).

Since the introduction of transit-time flow measurement (TTFM) in 2000, we revised abnormal grafts intraoperatively. Early (≤ 7 days) angiography was performed in 2820 patients (96.6%) at 1.5 ± 1.2 postoperative days, and surgical intervention was performed based on angiographic findings.

RESULTS

- Operative mortality was 1.1%. Average number of distal anastomoses per patient was 3.2 ± 1.0 .
- Intraoperative flowmetry-guided revision for distal anastomosis failures was performed in 1.3% (109 of 8,585) distal anastomoses.
- Angiography showed an overall patency of 98.2%; 99.0% for arterial and 96.9% for venous conduits.
- Patency of venous conduits was 87.2% for free grafts and 97.7% for composite grafts.
- After TTFM introduction, patency of arterial conduits became significantly higher (97.2% vs 99.2%);
- Patency of free venous grafts was not significantly improved (86.0% vs 91.4%).
- Early re-intervention according to angiographic findings was performed in 76 patients (2.7%).
Re-evaluation of graft patency before discharge in 31 patients who underwent revision of distal anastomoses showed improved patency (65.1% vs 95.3%).

CONCLUSIONS

- Intraoperative flowmetry-guided revision of abnormal grafts improved early arterial graft patency;
- Reoperation based on early angiographic findings may further improve graft patency at the time of discharge.

TAKE HOME

- Excellent summary report on the value of flow-guided CABG (TTFM) over 20 years by the foremost off-pump CABG surgeon in Korea.;

REFERENCE

Kim KB, Choi JW, Oh SJ, Hwang HY, Kim JS, Choi JS, Lim C "Twenty-year experience with off-pump coronary artery bypass grafting and early postoperative angiography," Ann Thorac Surg. 2019 Sep 6. (Transonic Reference # 11587AHM)