Hybrid Coronary Revascularization Using The da Vinci Robot - First Experience In Poland

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Objective

The surgical treatment of coronary artery disease is still associated with major trauma and longpostoperative rehabilitation. The development in minimally invasive techniques has changed theperception and offers comparable quality of anastomosis. The pilot study presents early robotic totally endoscopic coronary artery bypass (TECAB) experience and patient's rapid recovery after surgery measured in EQ-5D-5L questionnaire in 6-months follow-up.

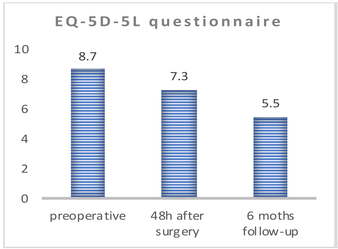
Variable	N=-52
Age (years)	65.7±6.7
Men (number, %)	40(76%)
COPD	3(5,7%)
Diabetes	15 (28,8%)
LVEF (%)	55,1±5,6
EuroSCORE II	0.8±0.4
NYHA II class	33 (63,4%)
CCS II class	37 (71.1%)
BMI (kg/m2)	27,6±0.4

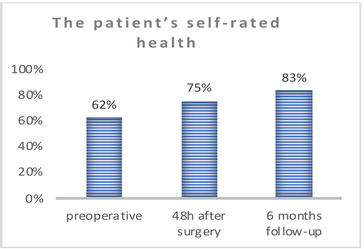
Methods

The prospective study collects data of elective patients qualified for robotic hybrid coronary revascularization (HCR) by local Heart Team. The surgical stage was performed with the da Vinci Xi Surgical System. Pre-, postoperative, and 6-months follow-up data were analyzed with emphasis on, length of stay (LOS), pain scale and EQ-5D-5L questionnaire for quality of live(QoL).

Robotic results	N=52	%
LIMA-LAD	52	100%
LIMA-LAD-DG	10	19%
BIMA (RIMA-LAD, LIMA-CX/MG)	8	15%
Operation time	174 +/-53 min	

Robotic results	
30-day mortality	1 (1,9%)
Chest revision for bleeding	0 (0,0%)
ECMO/IABP/LVAD	0 (0.0%)
TIA/Stroke	1 (1,9%)
Postoperative ventilation time (hours)	2,4±1,4
Total Drainage (ml)	215±105
ICU stay (hours)	21,4±7,3
LOS (days)	2,4±0,9
NRS-11 (24h after surgery)	2,1±0,8
NRS-11 (48h after surgery)	1,3±0,5





Results

Between September 2020 and November 2021 procedure with the da Vinci Xi System was performed on 52 patients. Mean age of patients was 65.7+/-6.7 and Euroscore II was 0.8+/-0.4. Robotic cardiac surgery operation was performed as single step or hybrid approach (34 patients) with stent implantation. Postoperative intubation time was 2,4+/-1,4 and intensive care observation time was 21,4+/-7,3h. The most patients were discharge on 2nd postoperative day. Comparison of the EQ-5D-5L questionnaire showed reduction in collected points (9,2+/-2 vs. 7,6+/-2,2 vs. 5,5+/-0,7).

Hybrid results	n	%
Hybrid	42	81%
Pre-PCI	22	52%
RCA	18	42%
DG	8	20%
CX	12	25%
LM	4	9,5%

Conclusions

The hybrid robotic TECAB is safe and feasible minimally invasive technique of coronary artery revascularization. It shows excellent early results with low pain expression, short LOS and high QoL surgery perception in 6-moths follow-up.

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