Carotid artery stenting with 300 Roadsaver stent implantations. Early and four-year results.

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Disclosure

Speaker name: PIOTR PIENIAZEK.

I have the following potential conflicts of interest to report:

☒ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)
☐ I do not have any potential conflict of interest
Incredible technological progress in both stent construction & temporary brain protection idea.

Cooperation with independent neurologist is of great importance (qualification and evaluation of CAS results).

New generation of mesh stents extremely decreased post procedural ischaemic stroke rates (Roadsaver & CGuard).

Coronary angiography prior to CAS (except pts. after CABG or recent PCI) have great impact on survival rate at long term follow-up - 65% of CAS pts have CAD.

Surgery is not a first choice of treatment of carotid lesions.

Hyperperfusion syndrome is not related to Stent or NPD selection.

Mechanical thrombectomy is helpful as a rescue treatment on the table in case of CAS complications.
Why the Roadsaver Carotid stent changed my daily practice for treatment of symptomatic or high-risk lesions.

5 unique properties of the Roadsaver stents!!!

1.) Roadsaver is the most flexible stent on the market. The first choice from radial access.
Why the Roadsaver Carotid Stent changed my daily practice for treatment of symptomatic or high-risk lesions.

5 unique properties of the Roadsaver stents!!

2.) Double layer micromesh scaffold (close cell stent plus nitinol mesh)

3.) Up to 50% deployment full re-sheathable and repositionable

4.) All sizes of RsS are 5F and all CAS can be done with 5F sheath or 6F guiding cath.

5.) The newest stent technology in cell area (0.38mm² or 375-500um)
Lesion specific stenting: particularly in symptomatic & high risk lesion!

- **Main goal:** sustained anti-embolic protection

What we have changed in practice from 2014

Lesion specific stenting: for better protection from late embolization

High risk CAS

Roadsaver stent
Asymptomatic stenosis

Symptomatic stenosis

Ad Hoc Committee, American Heart Association

Maximally allowed 30-day stroke/death-rate (after CEA):

- 6 - 11% for symptomatic
- 3% for asymptomatic

Restenosis Surgery: 5 - 11%

High risk asymptomatic lesions for carotid stenting: all treated with **Roadsaver** stents.
Procedural data of 298 CAS procedures & stent selections from 2014. John Paul II Hospital, Krakow, Poland

Carotid artery stenting with Roadsaver stent. Early and four-year results from a single-center registry

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Complications during hospitalization & 30d follow-up after 298 CAS procedures with Roadsaver implantation.

3.0% !! (symptomatic & high risk lesions)

1 (0.3%) Major stroke (patient fully rehabilitated)

6 (2.0%) Minor strokes - 2 pts - 0.7% stent occlusion
- all pts without any neurological symptoms at follow-up

2 (0.7%) Deaths - Cerebral Hemorrhage day 9 & 21

MI - 0%

7 (2.3%) in-stent restenosis > 50% at follow-up!!
Some of my comments to this results:

Minor/major stroke!!!! Imprecise assessment. The following classification should be used:

The NIHSS score is defined as the sum of 15 individually evaluated elements, and ranges from 0 to 42. Stroke severity may be categorized as follows: no stroke symptoms, 0; minor stroke, 1–4; moderate stroke, 5–15; moderate to severe stroke, 16–20; and severe stroke, 21–42

Our 1 patient with major stroke had 6 pts in NIHSS scale (today is driving a car)
Procedural data of our registry:
Proximal protection 40% vs distal neuroprotection system 60%.
Direct stenting 44%.
Don’t be afraid of high pressure for postdilatation.
More than 50% of Roadsaver stents are 20 & 25mm in length.
Figure 3. Four-year Kaplan-Meier event free-survival curves for patients undergoing carotid artery stenting with Roadsaver stents. A – Overall survival. B – Death-free survival for the symptomatic and asymptomatic patients.
Figure 4. Four-year Kaplan-Meier stroke free-survival curves for patients undergoing carotid artery stenting with Roadsaver stents. A – Stroke-free survival for all patients. B – Stroke-free survival for the symptomatic and asymptomatic patients.
Why we have such a good short & long term result in this registry. Only comprehensive treatment of a patient with multilevel diagnosed atherosclerosis by angiography of coronary, carotid and intracranial arteries. Endovascular and multi-specialized treatment are the only therapeutic option.
Pt. 70 yo. 28/05/2020. The first stage of the treatment. Vascular Surgery Department, JP II Hospital in Krakow. CAS LICA symptomatic with 90% stenosis. Mo.Ma 8Fr proximal brain protection and the Roadsaver 8.0/20 mm stent.
Pt.70 yo. 28.05.2020 After CAS – LICA – „No flow - Syndrome” Tight stenosis of Intracranial ICA 99%. UFH under APTT control. Access in the groin preserved.
Pt. 70 yo. 29.05.2020. Second stage of the complex procedure with Roadsaver 5.0/20 mm for intracranial part of LICA.
Neurology Department, University Hospital in Krakow.
Pt. 70 yo. 01.06 2020. Third stage of procedure PCI – RCA from radial access. Department of Interventional Cardiology, JPII Hospital in Krakow.
Six months follow-up!! AngioCT of two Roadsaver stents - no restenosis.
Stress test negative & CCS "0"
In some institutions only distal protection is available!! So triple protection in high risk patients can be safe option. Distal protection with filter, mesh Roadsaver stent & Paladin system for postdilatation. Very easy access & retrieval of Paladin within Roadsaver.
Cas procedure strategy in 2021

Mo.Ma EPD + Roadsaver Stent
Best Option for Symptomatic or High Risk Patients

- Intracranial bleeding at 30 days observation is not related to stent or NPD selection.
- Flat Death free survival and Stroke free survival curve at four years follow-up are very optimistic showing that CAS with Roadsaver stents protect the brain definitely for long time.
- 2.5% of restenosis may be associated with high pressure technic for postdilatation of Roadsaver stent.
Thank you

John Paul II Hospital Krakow PL