A Novel Design for a Metallic Stent in Vascular Bifurcations

Flexibility, mechanical stability, X-ray visibility, slow bioresorption, excellent bio-compatibility, rapid endothelialization and prevention of negative flow conditions

Technology

The ideal stent should provide high radiopacity, flexibility, slow bioresorption and prevent vascular collapse for 3-6 months while creating mechanical stability by minimizing material fatigue and stent fracture. Currently, only non-resorbable chromium or steel stents are approved in vascular regions with major sidebranches yielding unsatisfying clinical results.
A novel ultra-thin bioresorbable metallic stent was designed especially for use in sidebranches of human blood vessels to avoid negative influences on flow dynamics in their branches. This new stent significantly improves catheter passage through the stent mesh and optimizes the stenting results.

Innovation

- High fracture resistance of a metallic stent, excellent scaffolidng properites 6 month after implantation
- Useable for provisonal bifurcation stenting
- Ultra-thin center struts, simple and easy catheter passage through ultra-thin stent mesh
- Slow and biocompatitble bioresorption of the metallic stent.

Predominant Application

- Vessel bifurcations (carotid, femoral, coronary, intracranial)
- For use in obstructed blood vessels

Development Status

- 2019: Successful animal studies. (Hehrlein C et al. (2019) Zn-alloy provides a novel platform for mechanically stable bioresorbable vascular stents. PLoS ONE 14(1)
- 2020: Publication in preparation of head-to head animal comparisons with standard stents

Innovator

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Fields

Angiology, Vascular Surgery, Coronary heart disease, Stent

Patent status

PRIO date: 16/03/2013

EP 2967934 granted (CH, DE)

US 10898355 granted

Reference number

ZEE20120815

Status: May-21

CTF – The R & D Company of the Freiburg University and the Freiburg University Medical Center

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