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Nan Huang
Southwest Jiaotong University, China

TIME SEQUENCE FUNCTIONAL STENT: A NOVEL CONCEPTION AND CLINIC PRACTICE

Restenosis and late thrombus formation are the most challenges to stent intervention. Drug release from a drug eluting stent (DES) is a very effective solution for suppressing restenosis, but increasing late thrombus rate is even dangerous because of over 50% of death rate. Recently, a stent consists of metal stent/titanium oxide film/drug eluting coating (mixture layer of the biodegradable polymer PLGA and rapamycin) produced by author's lab. has been applied in clinic in China. The two surface coating treated stent played multifunction anti-restenosis and thrombus resistance after stent intervention. Clinic trial date showed that restenosis rate of the developed stent was as lower as 1.1%, and no late thrombus, however the late thombus rate of comparing stent was 2.1% during one year and after four years the thrombus formed patients in comparing group were increased to 3.9%, and 3% patients in comparing group were die due to the late thrombus. However no late thrombus and no cardiac death were reported for the multilayer stent group. The stent intervention have applied on about 70,000 patients, the follow up investigation for one year with 2,000 patients revealed that the late thrombus,cardiac death rate, TLF, and MACE are 0.1%, 0.1%, 0.2%, 0.65% respectively, a order of magnitude lower than other commercial stent.We proposed a novel conception: "Time sequence functional stent", the stent which possess the functions that can always match the interaction of the stent with the biological environment of the host in the intervention time sequences can has the ability to suppress the complications in the clinic practice. This presentation discussed in detail about how the developed multilayer stent match the conception of time sequence functional stent, and the further development tendency of a stent according to the conception.

Biography

Nan Huang has been the Chairman of the International Committee of Surfaces and the Interfaces of Biomaterials, and the Fellow of the International Union of Societies for Biomaterials Science & Engineering since 2007 and 2008 respectively. He was the Chairman or Co-Chair of 5 international conferences. He published over 400 papers on the international journals, 50 pieces of inventions, and presented over 30 times on international conferences as plenary speaker or keynote speaker. And he is an inventor of a stent with novel multifunction applied in clinic. His team is developing a new type of ventricular pump and thrombus filter cooperating with companies.

huangnan1956@163.com

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