材料研究学报 >>2009 >>23 >>(3)

材料研究学报 2009, 23(3) 300-304 DOI: ISSN: 1005-3093 CN: 21-1328/TG

研究论文

可降解镁合金表面载药涂层的制备和性能

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摘要:

在可降解AZ31B镁合金心血管支架表面成功制备了携带雷帕霉素的聚乳酸--聚三亚甲基碳酸酯(PLA--PTMC)共聚物涂层, 评价了涂层的表面形貌、降解性能、血液相容性和药物释放性能. 结果表明, PLA--PTMC共聚物作为载药涂层具有良好的柔韧性, 表面均匀、光滑, 降解周期超过1个月, 血液相容性良好. 涂层具有缓释雷帕霉素的功能, 释药周期超过1个月, 可在内膜增生期内有效抑制支架植入后再狭窄的发生, 满足冠脉支架表面载药层的使用要求.

关键词: 有机高分子材料 药物洗脱支架 载药涂层 聚乳酸--聚三亚甲基碳酸酯共聚物

Preparation and properties of drug--loaded coating on biodegradable magnesium alloy

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Abstract:

The sirolimus--releasing PLA--PTMC coating was successfully prepared on the biodegradable AZ31B magnesium alloy coronary stents. The surface morphology, degradability, biocompatibility and drug release characteristic of the coating were also evaluated. The results indicated that PLA--PTMC used as the drug elution coating showed good flexibility with smooth and uniform surface, the degradation period was over one month, and the biocompatibility was excellent. The drug--loaded coating had releasing function of sirolimus and the releasing time was more than one month, which could effectively inhibit the restenosis during the period of intima hypertrophy. The sirolimus--releasing PLA--PTMC coating showed potential to be used as a new type of coronary stent coating.

Keywords: organic polymer materials drug--eluting coronary stent drug--loaded coating polylactic acid--polytrimethylene carbonate copolymers

收稿日期 2008-11-28 **修回日期** 2009-01-07 **网络版发布日期** 2009-10-10

DOI:

基金项目:

辽宁省教委自然科学基金No.2008222、中国科学院知识创新工程重要方向项目No.KGCX2--YW--207以及中科院金属研究所青年人才领域前沿专项No.O7A7721171资助项目.

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