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AB222. Comparison of biocompatibility between PDMS and PMMA as packaging materials for the intravesical implantable device: changes of macrophage and macrophage migratory inhibitory factor

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Introduction: Several attempts to invent implantable devices have done, and it is also necessary to develop biocompatible packaging materials for implantable devices. Thus, we evaluated the biocompatibility of polydimethylsiloxane (PDMS) and polymethyl methacrylate (PMMA) by analyzing of the changes of macrophage, macrophage migratory inhibitory factor (MIF) and inflammatory cytokines of the bladder.

Materials and methods: A 2 mm-sized, ball-shaped lead was made and coated with PDMS or PMMA. After 1-, 2-, and, 4-week intravesical implantation with each lead balls in the bladder of the rats, the inflammatory changes by foreign body reaction were evaluated.

Results: At 1 week, the increased activity of macrophages and increased expression of MIF in the urothelium was observed except control group, however the significantly decreased activity of macrophages and MIF expression in rats implanted with PDMS- or PMMA-coated lead were noted at 2 and 4 weeks. In addition, significant decreased levels of inflammatory cytokines such as IL-1β, IL-6, and TNF-α were observed with time. In this study, we noticed the expression of MIF in the urothelium and presented the changes of MIF as well as macrophages and other inflammatory cytokines.

Conclusions: We suggest that the role of MIF in the foreign body response. After the intravesical implantation with PDMS or PMMA, the lower inflammatory response was observed in the bladder. Therefore, PDMS or PMMA are suggested for the biocompatible polymers in the bladder.

Keywords: Biocompatibility; polydimethylsiloxane (PDMS); PMMA; macrophage and macrophage migratory inhibitory factor; change

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AB223. Expression of tight junction proteins in rat vagina

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Aim: Tight junction plays a role in apical cell-to-cell adhesion and epithelial polarity. In this study, we investigated the expression of tight junction proteins, such as Claudin-1, zonula occludens (ZO)-1, junction adhesion molecule (JAM)-A, and occludin in rat vagina.

Methods: Female Sprague-dawley rats (230-240 g, n=20)

were divided into two groups: control (n=10) and bilateral ovariectomy (n=10). The expression and cellular localization of claudin-1, ZO-1, JAM-A, and occludin were determined in each group by immunohistochemistry and Western blot.
Results: Immunolabeling of ZO-1 was mainly expressed in the capillaries and venules of the vagina. Claudin-1, JAM-A, and occludin were expressed in the epithelium of the vagina. The immunoreactivity and protein expression of claudin-1 was significantly decreased in the ovariectomy group compared with the control group.
Conclusions: Our results suggest that tight junction proteins may have an important role in the vagina. Further studies are needed to clarify the role of each tight junction protein on vaginal lubrication.
Keywords: Tight junction proteins; rat vagina; expression

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AB224. SaRNA guided inos upregulation improves erectile function of diabetic rats

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Purpose: Promoter targeted saRNAs mediate sequence specific up-regulation of gene expression. We explored the therapeutic effect of RNA activation mediated iNOS gene activation on improving erectile function in a rat model of diabetes mellitus.
Materials and methods: An optimal saRNA sequence specific for iNOS promoter was cloned into an adenoviral vector, resulting in AdU6/shiNOS and AdU6/shControl. The corresponding viruses were used to transduce cultured rat cavernous smooth muscle cells. Streptozotocin induced diabetes models were established in rats and used to test the effects of intracavernous delivery of iNOS saRNA viruses on erectile function. iNOS expression in the cavernous smooth muscle cells or penile tissue of treated rats was assessed by reverse transcriptase-polymerase chain reaction and Western blot. Cyclic guanosine monophosphate was analyzed by enzyme-linked immunosorbent assay. Intracavernous pressure in response to cavernous nerve stimulation was measured using a data acquisition system on post-injection days 1, 3, 5, 7, 10 and 14.
Results: Adenovirus mediated expression of iNOS saRNA caused sustained up-regulation of iNOS in cavernous smooth muscle cells. Intracavernous injection of AdU6/shiNOS activated iNOS expression *in vivo* and significantly increased peak intracavernous pressure in streptozotocin induced diabetic rats via nitric oxide/intracellular cyclic guanosine monophosphate activation.
Conclusions: Results show that saRNA mediated iNOS over expression in the penis can restore erectile function in streptozocin diabetic rats via the nitric oxide-cyclic guanosine monophosphate pathway.
Keywords: Cavernous smooth muscle cell (CSMC); small activating RNA; cyclic guanosine monophosphate (cGMP); erectile dysfunction (ED)

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AB225. The tumor suppressive role of CAMK2N1 in castration-resistant prostate cancer

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