

NanoViagra

April 28 2009, by David Hecht



(PhysOrg.com) -- A new generation of anti-impotency drugs based on nanoparticles might be coming quickly. Researchers at the Albert Einstein College of Medicine in New York presenting at the 104'th Annual Meeting of the American Urological Association have discovered a new potential application for drug carrying nanoparticles as a topical treatment for erectile dysfunction (ED). This breakthrough should hopefully stimulate further work in this area.

The nanoparticles were used as a unique sustained release drug delivery mechanism. They are composed of a hybrid hydrogel/glass capsule containing nitric oxide. The nitric oxide (NO) is slowly released at therapeutic levels when applied to the cutaneous. NO aids in erection biology and helps to relax smooth muscle cells; it occurs naturally in the body to help expand blood vessels, helping them fill with blood.

The nanoparticles were applied topically to the skin of the penis of seven

rats and the erectile response was measured by intracorporal pressure/blood pressure ratio. 71% of the rats tested with the nanoparticles experienced positive effects on the ICP/BC which led to visible erections, with an average response time of 65 minutes. The researchers claim that this topical treatment will likely have fewer side effects than Viagra, which is ingested orally, and known to cause headaches and facial flushing. They also claim that given further research, their nanoparticle treatment could work faster than Viagra.

Says Ira D. Sharlip, MD, "This is a very interesting concept which has potential to impact treatment of many conditions including erectile dysfunction if it can be translated from the animal lab to clinical practice. It remains to be seen whether the effect of the nanoparticle technology is a local or a systemic effect." The [nanoparticles](#) could act as a transport mechanism for erectogenic agents, and could help localize the therapeutic impact without the potential systemic consequences of an ingested pill. Dr. Sharlip also feels that this type of technology can be applied to other problems such as premature ejaculation, which occurs in 20-30% of men. With further research, I'm sure that a solution for this problem will come soon.

Hopefully, this research will translate well to clinical practice, and will give further validation to programs seeking to use nanotechnology for medical/health applications. For example, companies such as Tego Biosciences are hoping to use fullerenes as therapeutics, and there is numerous research into using carbon nanotubes as a cancer killer. Needless to say, given the age distribution amongst those at NIH, I'm sure this particular research will continue to be well funded.

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