Treatment of cervical pre-cancer: Suppository developed against HPV-induced changes

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Preliminary stages of cervical carcinoma, that is, precancerous stages of cancer of the neck of the womb, can be treated efficiently without surgical intervention. This innovative treatment has been developed by scientists at the Comprehensive Cancer Center Vienna (CCC), an establishment belonging to the MedUni Vienna and Vienna General Hospital, and has now been tested successfully in a clinical study.

Infection with the human papillomavirus (HPV) can lead to cervical

cancer via a preliminary stage – that of cervical intraepithelial neoplasia (CIN). In Europe 205,000 women every year are affected by this condition, most of them are aged between 25 and 30 years. Since in many cases slight manifestations of the disease (CIN 1) heal spontaneously, mostly no treatment is given but self-healing monitored by means of rigorous and continuous check-ups. Conisation is the standard treatment in the more severe forms (CIN 2 and 3). The neoplasms, that is, the changed areas, are cut out of the cervix in cone-shaped sections. This surgical intervention is linked to a relapse rate of up to 18 percent and can also lead to side effects such as infections or bleeds. The most significant risk of the intervention is however represented in the distinct rise in the premature birth rate to 17.2 percent (as opposed to 6.2 percent in women who have not undergone conisation).

Proven ingredient used innovatively

The new treatment approach was developed to spare those affected the irksome intervention and the raised risk of giving birth prematurely. Here an immune response modifier (Imiquimod) is used, which is licensed as a cream for the superficial treatment of genital warts amongst other things. The ingredient is applied to the cervix in the form of a suppository where it triggers an inflammation-like reaction. Paul Speiser, senior physician in the Department of General Gynaecology and Gynaecological Oncology, part of the Comprehensive Cancer Center Vienna of the Medical University Vienna and head of the study explains how it works: "The changes caused by the HP-virus are not recognised by the immune system in certain situations and in these cases can lead to the development of a CIN. By activating the immune response locally through Imiquimod the HPV can be rendered identifiable by the immune system; then it will be effectively combated by the immune system itself."

The authors of the study, to whom along with Christoph Grimm and Stephan Polterauer also Alexander Reinthaller belongs, deputy head of the Department of General Gynaecology and Gynaecological Oncology at the University Department of Gynaecology, part of the Comprehensive Cancer Center Vienna of the MedUni Vienna, were able to prove in their work a resolution rate for the neoplasms of 69 percent and a very good tolerability of the preparation. Christoph Grimm, senior physician in the Department of General Gynaecology and Gynaecological Oncology, part of the Comprehensive Cancer Center Vienna of the MedUni Vienna concludes: "The initial data are very promising. The agent seems to be very effective in the treatment of a CIN 2 and 3, is simple to use in this application and is considerably less invasive than a surgical intervention. However, to be able to deploy the treatment routinely on patients, yet further studies are necessary and these are currently being carried out by our team."

More information: Grimm, C. et al. Treatment of cervical intraepithelial neoplasia with topical imiquimod: a randomized controlled trial, *Obstet Gynecol*. 2012 Jul;120(1):152-9. www.ncbi.nlm.nih.gov/pubmed/22914404

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