

Media release

Bern, 28 September 2017 / mk

Novel Therapy for Endometriosis?

Why does endometriosis ameliorate during pregnancy? In the answer to this question, researchers from Inselspital in Bern, the HCERM fertility center in Rome and BioIncept in New York may have discovered a new treatment for endometriosis.

The chronic inflammatory condition endometriosis improves during pregnancy. Responsible for this anti-inflammatory action is a molecule (PreImplantation Factor: PIF), produced by the embryo. The same effect can be reproduced with a synthetic version of PIF, as a multidisciplinary group of researchers from Inselspital Bern, Rome and BioIncept New York were able to demonstrate on 13 September 2017 in PLOS One. The study results foreshadow the potential development of medication that can treat or even prevent endometriosis.

Tackling the root cause

“As PIF interacts with key regulators of immune processes, we can now influence the inflammatory reaction in endometriosis” explains corresponding author PD Dr. Dr. Martin Müller, Senior Attending in the Department of Obstetrics and Gynaecology at Inselspital, Bern University Hospital, and Visiting Assistant Professor in the Department of Obstetrics, Gynaecology and Reproductive Sciences at the Yale School of Medicine. Lead author Marco Sbracia, who works in the Department of Obstetrics and Gynaecology at Hungaria Center for Endocrinology and Reproductive Medicine in Rome, adds: “Our findings suggest that PIF is involved in the pathogenesis of endometriosis and might be used therapeutically as well as preventively.”

In this study Müller and the team discovered that PIF regulates cell death depending on the inflammatory milieu. Therefore, PIF has potential as a diagnostic marker and therapeutic option. “The results are exciting,” says Prof. Dr. Michael Mueller, Head of Gynaecology and Oncology at Inselspital Bern. “We want to further investigate this new approach to tackle the inflammatory processes at the root of endometriosis.”

A pregnancy molecule as treatment

PIF was first discovered and characterised by Dr. Eytan R. Barnea, the chief scientific officer of BioIncept, LLC. The FDA has awarded PIF fast-track designation, resulting in a recently completed first-in-human clinical trial to treat autoimmunity patients at the University of Miami. In Bern, the research team is now evaluating the possibility of a clinical trial for endometriosis. A [potential application for the prevention of preterm delivery](#) is also being evaluated.

It takes on average eight to ten years until **endometriosis** is diagnosed. Ten percent of women of childbearing age are affected by the progressive chronic disease. Besides strong pain during menstruation, the inflammatory adhesion may cause infertility. Still, many women put up with the disease as “normal menstrual complaints” until the pain is no longer bearable. “At this stage, minimally invasive surgery is often the best option to achieve freedom from symptoms,” says Michael Mueller, endometriosis specialist and Head of Gynaecology at the Department of Gynaecology and Obstetrics at Inselspital, Bern University Hospital.

The [endometriosis center at Inselspital](#) annually treats over 200 patients with a team of physicians and specialized endometriosis nurses. It has conducted research on the chronic disease for over fifteen years now. Currently, endometriosis is predominantly treated with hormone-active drugs or through surgery. The development of new drugs to stop the inflammatory processes without interfering with the woman's hormone balance is therefore a major concern. On the occasion of **Endometriosis Day** (29 September), the Department of Gynaecology and Obstetrics at Inselspital wants to sensitise the public to the still underestimated disease, especially underlining the importance of researching new therapeutic options.

Study link: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0184399>

Legend:

[PIF \(green\) modulates the inflammatory cells \(red\) in endometriosis](#) (microscopic view, Department of Gynaecology and Obstetrics at Inselspital, Bern University Hospital).

Media enquiries:

PD Dr. Dr. med. Martin Müller, Senior Attending in the Department of Gynaecology and Obstetrics at Inselspital, Bern University Hospital, contact via kommunikation@insel.ch, +41 31 632 79 25.