

13<sup>th</sup> International Conference on

# Metabolomics and Systems Biology

October 11-12, 2018 | Zurich, Switzerland

## The role of phospholipids in endometriosis pathogenesis

**Mainak Dutta**  
BITS Pilani, UAE

Endometriosis is a common, benign, chronic gynecological disorder often characterized by pain and infertility whose etiopathogenesis still remains unknown. It affects nearly 10% of women in their reproductive age and is defined as the proliferation of endometrial glands and stroma outside the uterus. These fast growing endometrial cells are thus expected to have a fast growing membrane build up. Our NMR (Nuclear Magnetic Resonance) based metabolomics study on serum samples collected from women with endometriosis indicated that several apolipoproteins, ketogenic amino acids, unsaturated lipids, lipoproteins and phosphatidylcholine (PC) were altered compared to healthy patients. These lipid and lipid transporting biomolecules are expected to be elevated because of lipid aberrations by several mechanisms. We, therefore, further used an ultrahigh pressure liquid chromatography (UHPLC)-quadrupole time-of-flight mass spectrometry (QTOFMS)-based lipidomics approach in endometriosis mouse model to study lipid metabolism in the disease. Further, we investigated the PEMT pathway for its possible relationship to the altered expression of PCs and phosphatidylethanolamines (PEs). Our results indicate that though the expression of many lipids was altered in endometriosis mice, a number of them appear to be due the peritoneal inflammation associated with the disease. The study provides new insight into endometriosis pathogenesis and progression.

mainak@dubai.bits-pilani.ac.in