

A PILOT STUDY TO IDENTIFY MICROBIAL AND IMMUNE BIOMARKERS FOR IMPROVED DIAGNOSIS OF PELVIC INFLAMMATORY DISEASE

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Background:

Pelvic inflammatory disease (PID) is a polymicrobial condition often involving sexually transmitted pathogens which are identified in approximately only 30% of cases. Where a causative organism is identified, organisms include *Chlamydia trachomatis*, *Mycoplasma genitalium*, and *Neisseria gonorrhoea*.

It is not known why PID develops in some women but not others, with host microbiome and immune factors likely involved. Reflecting the theme of the conference, PID is a disease where *many strands make up one rope*.

This case-control study aims to determine the pathogenic, cervical and vaginal microbiome, and host immune factors associated with a diagnosis of PID.

Methods:

Thirty women with PID and 30 asymptomatic controls aged 18-29 will be prospectively recruited for the study. Consenting women will complete a written questionnaire about their sexual and reproductive history. Three cervical and one high vaginal clinician-collected swabs will be taken in addition to any diagnostic tests performed as part of standard care during the consultation.

The de-identified swabs from the PID cases and controls will be analysed for microbiota, pathogens and immune expression and correlated with the participant questionnaire information to identify factors that are significantly associated with PID.

Results:

Preliminary data shows two vaginal community state types (CST) present in all PID cases. CST III (a microbial community dominated by *Lactobacillus iners*) and CST IV (a microbial community with anaerobes and no dominant *Lactobacillus*) were present in all PID cases.

Preliminary data indicates no significant difference in age, or other basic epidemiological data between the cases and controls recruited.

Conclusion:

This is the first research to examine host and pathogen factors associated with PID. This will enable improved understanding of PID, lead to larger scale research and aid development novel diagnostic tests and future therapeutic targets.

Disclosure of Interest Statement:

Family Planning NSW and University of Technology Sydney have no conflict of interests to declare relating to this research.