

Proof of Principal Fecal Microbial Transplantation is possible in short bowel piglets

PROJECT DESCRIPTION

Short bowel syndrome (SBS) is the leading cause of neonatal intestinal failure, where parenteral nutrition (PN) is required as the intestine has inadequate length to absorb nutrients for normal health or growth. An important risk for morbidity and mortality in this population will be severe infections due to ongoing PN use, via intravenous indwelling catheters. The only solution to stop PN is adaptation in the remnant intestine. One of the factors causing disease morbidity, especially sepsis, is microbial dysbiosis. We and other experts are very concerned that the severe microbial dysbiosis in SBS inhibits successful intestinal adaptation. Unfortunately, this has rarely been studied in SBS, mainly as until very recently characterizing the small intestinal microbiome has been expensive and difficult. We know that current clinical practice to manage dysbiosis in SBS is largely empirical use of broad spectrum oral antibiotics, which will decrease beneficial microbial diversity in the adapting remnant intestine. Furthermore, novel treatments for microbial dysbiosis in neonatal SBS, like probiotics, have been inadequately studied in animal models and when applied 'ad hoc' for babies with SBS the treatment has been complicated by translocation of the probiotic bacteria. A new and exciting modality to treat intestinal dysbiosis is fecal microbial transplantation (FMT). The aim of this study is to test FMT for neonatal SBS using an appropriate animal model that is currently only available to study here in Alberta. We will test the safety and efficacy of FMT to manage the microbial dysbiosis we observe in our neonatal piglet model. As a secondary goal we will determine how this approach relates to intestinal adaptation.

FACULTY-DEPARTMENT

Medicine - Pediatrics

OPEN TO STUDENTS FROM THE FOLLOWING INSTITUTIONS

Chinese universities participating in the [*Double First-Class Initiative*](#).

DESIRED FIELD OF STUDENT STUDY

Training in nursing, medicine or veterinary science

INTERNSHIP LOCATION

Swine Research and Technology Centre at the University Farm

NUMBER OF INTERNSHIP POSITIONS

1

INTERNSHIP DATES

Start: July 2, 2019

End: October 2, 2019

ARE THE DATES FLEXIBLE?

Yes, I am flexible regarding the internship dates. Selected students can contact me to request a date change.