Probiotic Research Update January 2023

****

Impact of Labinic and other probiotics on neonatal microbiome

Beck LC et al. Strain-specific impacts of probiotics are a significant driver of gut microbiome development in very preterm infants . Nat Microbiol. 2022 Oct;7(10):1525-1535

This 10 year comparative, observational study showed that different probiotics result in changes to the neonatal microbiome that are diverse and associated with positive health outcomes. Use of Labinic was compared with the use of Infloran in babies under 32 weeks gestation, compared to controls who did not receive probiotics. In the case of babies treated with Labinic, their stool profile relfected the composition of the probiotic mixture, as did those receiving other probiotics, whereas the untreated group had a microbiome dominated by Klebsiella. It was also encouraging to note persistence of the probiotics, particularly the Bifidobacteria species which is in line with previous reports. Breast milk was bifidogenic in these babies.

Comment:

The functional changes induced by administration of Labinic, and other probiotics, shows that the probiotics are “surviving” gut transit and are colonising as expected, with Bifidobacterial dominance persisting as would be expected for the healthy neonatal gut. The is also evidence for improved health through the administration of Labinic drops.

++

A new online resource for human plasma metabolite signatures in the gut

Dekkers et al. An online atlas of human plasma metabolite signatures of gut microbiome composition. Nat Commun (2022) 13(1):5370.

Not only is there an extraordinary range and variety of molecules generated by the human microbiome, but many of them enter the blood and can be detected. Their metabolic effects are only just beginning to be substantiated. This paper describes a fascinating new resource for researchers in this field.

The paper:

Molecules from the microbiome not only enter the bloodstream, but may impact health. Their absorbtion may be impacted by many external factors such as diet or medications. This study characterised, in detail, the gut microbiome and plasma metabolome of 8583 adult participants in Sweden. They found associations between species variations and diversity and the plasma profile. This is reported online at https://gutsyatlas.serve.scilifelab.se/ .This resource will enable studies of metabolite modifications.

Comment:

The field of microbiome metabolites, their impact on health and disease, is very exciting, and should lead to microbiome based therapies, where alterations of the microbiome lead to improvements in human health.

++

Perinatal Antibiotics

Morreale C et al. Effects of Perinatal Antibiotic Exposure and Neonatal Gut Microbiota. Antibiotics (Basel). 2023 Jan 28;12(2):258

This review article describes the dynamic colonisation of the infant and the factors affecting it. The authors review the effects of antibiotics on immunological development and the risks that may increase the likelihood of obesity, diabetes, inflammatory bowel diseases and allergies. The effects of maternal antibiotic prophylaxis used in Caesarean section, as well as for post-natal problems with subsequent transmission via breast milk, modifies the vaginal and neonatal gut microbiome.

The authors also review how to repair some of the adverse effects caused by antibiotics, emphasising that multistrain preparations of probiotics are more effective than single strain preparations. There is also some evidence that Bifidobacterial supplements given after preterm birth can prevent persistence of antibiotic resistance in the gut microbiome.

Comment:

This review covers some of the state of the art knowledge of the effects of antibiotics on the microbiome and describes how probiotics may be useful in this context. The benefits of a multistrain preparation, and of Bifidobacterial species, are also frequently mentioned. There is a link to the paper here

++

This update was commissioned by Biofloratech Ltd, who manufacture Labinic® Drops, a liquid multi-strain probiotic containing Lactobacillus acidophilus, Bifidobacterium infantis and Bifidobacterium bifidum in a total daily recommended dose of 2 billion cfu/day.

Labinic is manufactured to stringent high-quality control standards in a GMP manufacturing licenced pharmacy.

Labinic has an excellent safety profile and is widely used in NHS (UK) and overseas neonatal units.

We are pleased to see further evidence of its use emerging in clinical papers and we confirm that we have had no influence over any publications describing its use.

Thank you for reading this update, we hope you found it interesting. Please feel free to share with healthcare and other professional colleagues.

Biofloratech Ltd