



The mighty human microbiome: a key to solving the problem of AMR in primary care?

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Abstract:

The human microbiome is overly exposed to antibiotics, due, not only to their medical use, but also to their utilization in farms. In the last decade interest in the effect of antibiotic therapy on the host microbiota has increased, and new technologies are beginning to uncover the complexity and importance of balanced host-microbiota interactions. Microbiome composition can be rapidly altered by exposure to antibiotics, with potential immediate effect on the health (acute diseases). For example a recent study of Ildiko et al. [1] showed that patients with UTI given an antibiotic were more likely to experience a subsequent UTI in the following weeks. However, antibiotics-induced changes of the gut microbiome can also indirectly affect health in long term (e.g. allergies/atopy/asthma) [2]. Once antibiotic treatment has stopped, the microbiome may present a certain degree of resilience, being capable of returning to a composition similar to the original one, but the initial state is often not totally recovered. In fact, antibiotic-induced microbiota alterations can remain after a long periods of time, spanning months and even years.

The question is whether GPs and patients take the biologic costs of antibiotic use into account sufficiently in making treatment decisions. Differences in perceptions about how risk-free antibiotic treatment is might in part account for the variation in rates of their use among GPs worldwide. Evidence of alternative treatment strategies that could relieve symptoms and reduce antibiotic consumption is needed.

In patients who needed to be treated with antibiotics microbiome modulation to restore the human microbiome post antibiotic use might be a powerful strategy to improve resilience and health. Microbiota prevention- and intervention strategies, including complementary and alternative medicine (CAM), faecal transplant, prebiotics, probiotics and nutrition, might be effective strategies to conserve and steward the effects of antibiotics.

Biography:

Esther van der Werf is a senior epidemiologist and joined The Louis Bolk Institute per September 2019 as Program Manager



Integrative Medicine to continue her research on Integrative medicine and antimicrobial stewardship. She obtained my PhD from Erasmus University Rotterdam (2006) in the Netherlands and subsequently worked at University of Medical Centre Utrecht and University of Applied Sciences Leiden, before coming to the Center of Academic Primary Care of the University of Bristol in 2015. From August 2018 to August 2019 I have been working at the School of Medicine of Taylor's University, Kuala Lumpur, Malaysia. She have 20 years' experience of research (over 40 peer-review publications: H-index=20) and project management (Randomised clinical trials and observational studies). My current work has a strong focus on health promotion, prevention and integrative medicine.

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